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ABSTRACT

This publication focuses on school and classroom organization for team teaching and provides insights into the solutions of accompanying problems such as clarifying roles, overcoming scheduling difficulties, avoiding rigidity in daily programing, and dealing with communication problems. The booklet also includes a field-oriented description of team teaching, analyzes the procedural components of the program, describes staff roles, and comments on the future of the school's organization. A condensed version of an evaluation of the plan by Columbia University staff members is included. (Photographs may reproduce poorly.) (Author/MLF)

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A Compendium of Team Teaching

in

THE DUNDEE SCHOOL

Greenwich, Connecticut

1958-66

EA 003 626

Greenwich Public Schools
Greenwich, Connecticut

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INTRODUCTION

A number of publications have evolved from the Dundee Team Teaching Project in Greenwich, Connecticut. Each has described or evaluated separate phases of the program. THE DUNDEE DESIGN describes the program for staff preparation and outlines the training period from 1959-62. A detailed day-to-day account of team teaching is related in the twelve volumes of THE DIARY OF THE DUNDEE SCHOOL which covers the first two years of the teaching program from 1962-64. THE RESEARCH REPORT is the compilation of the two-year study by a team of professors from Teachers College, Columbia University, and evaluates the team teaching program in Dundee during the 1962-63 and 1963-64 school years. THE RESEARCH REPORT was made possible by a grant from the Fund for the Advancement of Education to the Greenwich Public Schools.

This compendium is an attempt to draw together information and conclusions of the above sources. It is hoped that none of the conclusions or descriptions of the original documents have been altered in the process.

The journals and reports derived from the Dundee experience were never intended as models for other schools to emulate, but rather as experiences for reflection by those interested in this approach to the education of elementary children.

WILLIAM J. EDGAR
SUPERINTENDENT OF SCHOOLS
SEPTEMBER, 1965

FOREWORD

> In order to provide individually planned programs for learners, taking into account the specific objectives to be achieved, the horizontal organization of the school should permit flexibility in assigning pupils to instructional groups that may range in size from one pupil to as many as a hundred or more. Well-planned cooperative efforts among teachers—efforts such as team teaching, for example—should be encouraged and tested.[1]

What kind of alternative structures shall the school consider in order to move learners through from enrollment to graduation? How shall the school be organized vertically? How shall learners be placed in teachable groups? What should be the horizontal structure of the school? These are examples of the kinds of organizational questions schools are asking in the mid-sixties.

In response to questions about vertical organization, the choices range among grading, multi-grading, and non-grading. To questions about horizontal organization, many alternatives are available, including self-contained classrooms, departmentalization, core programs, and so on. This publication deals with one promising way of organizing the school horizontally—team teaching, which has been tried in many schools as one solution to a growing number of teaching and learning problems. These substantive problems include selecting content from the ever-growing body of available knowledge, establishing priorities for the school, and designing a program appropriately balanced for the individual.

In planning and organizing for teaching, there are four sets of problems from which educators cannot escape: organizing the curriculum; organizing the school; organizing the classroom; and organizing personnel, instructional resources, time, and space. This publication focuses on a part of the second and third problems—organizing the school and organizing the classroom. Team teaching as examined in this volume does not deal directly with the central issues of selecting objectives, quality of learning experiences, or innovations in evaluating student progress. Implications for the solution of these central issues are implicit in the book, but the specific ways the faculty dealt with these substantive curricular questions perhaps will be spelled out in another report. The book does give insight into the solution of such new procedural problems as clarifying roles, overcoming scheduling difficulties, avoiding rigidity in daily programming, and dealing with communication problems.

For some time instructional leaders in schools have called for a field-oriented description of team teaching. A *Compendium of Team Teaching in the Dundee School* provides such a description and goes further. It analyzes the procedural components of the program, portrays the actions of the staff, and sketches the future of the school's organization. The reader must not expect recipes or easy and quick answers to the complex and difficult questions of teach teaching. This is not such a publication—unless the reader makes it one. He must not expect a final plan. What he will get from a careful study of the volume is a good description of the team teaching plan of one school and an evaluation of the plan by an outside team. He also will find ideas about instituting a program of team teaching in his own school and of hazards to avoid as he reviews the experiences of one faculty as it studied, analyzed, deliberated, and still kept school going.

OLE SAND
Director
Center for the Study of Instruction
National Education Association

ROBERT MCCLURE
Associate Director
Center for the Study of Instruction
National Education Association

Washington, D.C.
October, 1965

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[1]National Education Association, *Schools for the Sixties*, A Report of the Project on Instruction (New York: McGraw-Hill Book Co., 1963), p. 113.

DUNDEE 1958-62

PREPARATION AND TRAINING — A DESIGN

The Greenwich, Connecticut, Team Teaching Project has its roots in the original team program in the Lexington, Massachusetts, Schools' Project which was first outlined in a document entitled, "Tentative Proposal for Lexington, May 2, 1957." The Superintendent of the Greenwich Public Schools at the time of the initiation of the team program was Dr. John Blackhall Smith. Dr. Smith, as former superintendent of the Lexington Schools, had, in cooperation with the Harvard Graduate School of Education, introduced team teaching to the Lexington Schools. The project, more accurately known as the Franklin School Project, became operational in the fall of 1957. With the experience gained from the 1957-58 school year, Dr. Smith had plans for continuing team teaching. When elected superintendent of the Greenwich Public Schools, he began the development of a team teaching program and the planning of a school designed for meeting the unique space requirements for team teaching.

Early in 1959, the Greenwich Board of Education authorized Dr. Smith to get in touch with organizations that might make financial grants for research and development purposes in the schools of Greenwich. At that time, as a part of its long range building program, the Board of Education scheduled the building of an elementary school on Florence Road in the Havemeyer section of Old Greenwich. This school later became the Dundee Elementary School.

Officials of the Ford Foundation indicated that favorable action on the proposal for an educational grant would be taken. On May 19, 1959, Dr. Smith officially requested from the Fund for the Advancement of Education an immediate grant of $25,000 to the Greenwich Public Schools to finance the development of a team teaching program and to provide the information and details needed to design an elementary school building that would facilitate team teaching.

On June 24, 1959, the grant was officially received. The monies were to be used to develop a training program for the teachers who would be involved in team teaching.

This training program was to provide information and experiences that would increase the teachers' understanding of team teaching and to prepare them for teaching in the proposed school. A series of meetings, designed to continue over a two-year period, were outlined in initial meetings with the teachers who volunteered for the team program. Summer workshops, with consultants, were included to allow more time and study in depth than would be permitted by meetings held during the school year after school hours. The team teachers visited many different schools involved in promising educational innovations or practices. The entire Dundee staff discussed the information gained from such visits. Those ideas that were deemed useful were integrated into the curriculum practices and organizational structure of the school.

When conceiving the team teaching plan for Greenwich, Dr. Smith felt that a successful program would depend a great deal upon the enthusiasm of the teachers. For that reason, he made entry into the team program voluntary. At a meeting held June 15, 1959, Dr. Smith explained the proposed team teaching plan to interested elementary teachers from the Greenwich Schools. Each teacher was selected for the program on the basis of 1. principal's recommendation, 2. past teaching performance, and 3. suitability of temperament.

Although the first workshop was held in 1959, the staff was not selected on a permanent basis until January, 1961. At that time, fifteen appointments were made and later, others were added to form a total staff of twenty-four.

The original plan for the training program envisioned a two-year sequence, but because of problems in the construction of the Dundee plant, another training year was included. The additional time for training was useful to the staff. However, results of questionnaires distributed to the teachers during the first year of teaching at Dundee indicated that the third year preparation was not as valuable as that of the preceding ones.

A wide variety of experiences and ideas was presented to the teachers during the three years of meetings and workshops. Consultants who participated included: Mrs. Ethel Bears, Principal of the Franklin Team School in Lexington, Mass.; Dr. Bryce Perkins, Director of the Norwalk, Conn., Team Project; Dr. Robert H. Anderson, Head of the Department of Elementary Education of Harvard University; Dr. Glen Heathers, Director of the Experimental Teaching Center of New York University; and Dr. Ellis Hagstrom, Professor of Education, Colgate University.

Since the Dundee Program had a trained staff and a school designed specifically for team teaching, it provided an excellent opportunity for the study of the effects of team teaching as compared with those resulting from teaching in the self-contained classroom. The Fund for the Advancement of Education recognized the study's potential contribution to education and granted additional funds for a two-year evaluation of the program. The evaluation was done by a selected staff from Teachers College, Columbia University.

The purpose of the study is outlined in the original request:

BOARD OF EDUCATION, GREENWICH, CONNECTICUT

INTRODUCTION

Team teaching has been and is being tried in many schools throughout the country. Team teaching as it will exist in the Greenwich school system offers a very real opportunity for a clear-cut evaluation of this type

of school organization, inasmuch as Greenwich offers the unique condition of bringing together a staff of teachers trained over a period of three years, and a building designed specifically for team teaching, the Dundee Elementary School. Greenwich is easily accessible to teachers and administrators in the eastern United States who might wish to observe and study the team teaching program.

PURPOSE OF THE STUDY

The purpose of this study is to make a thorough evaluation of the design of team teaching and proposes to do this by making a depth assessment in the following four areas:

I. Pupil Growth and Development
II. Teacher Growth
III. Administrative Design
IV. Curriculum Impact

While there are other areas that may be studied, it is agreed that these mentioned have the greatest value in determining the outcomes of team teaching.

The following indicate some of the particular matters that will be studied in the four major sections:

I. Pupil Growth and Development

a. Academic and non-academic subject matter achievement. (This will be given the greatest emphasis in the study.)
b. Study habits and enthusiasm for independent study or individual projects.
c. Attitudes towards teachers.
d. Range of new interests.
e. General behavior–discipline.

II. Teacher Growth

a. Utilization of new and varied teaching techniques.
b. Awareness of leadership possibility and change in role of teacher.
c. Gain in professional know-how through exchange, etc.
d. Recognition of opportunity for curriculum change.
e. Recognition and concern for a greater number of students.
f. Awareness of pupil individual differences.

III. Administrative Design

a. Relationship to new type of hierarchy.
b. Career opportunities.
c. Principal's administrative role.
d. Sensitivity to curriculum change.

IV. Curriculum Impact

a. Variety of methods, equipment, and materials used.
b. Group practices.
c. Re-deployment of teachers and specialization.
d. Adaptation of texts, materials, and equipment to the curriculum and the opportunity for change within the curriculum.
e. Individualized curriculum and scheduling.

TIME FOR PROJECT

It has been determined that the objectives of the study can be accomplished in a period of time beginning July 1, 1962 and ending July 1, 1964.

EVALUATION TEAM

The proposed evaluation requires the objectivity of persons outside of the Greenwich schools and demands that these individuals be experts in certain fields of education. The administration of Teachers College of Columbia University has agreed to supply the personnel for the proposed assessment. Staff from the following fields are specified: (1) school administration and teacher personnel; (2) research and psychology (tests and measurements); (3) social relationships; (4) curriculum design. In addition, two graduate assistants in the field of research would be utilized. The four major areas would be supervised by professors of Teachers College.

INVESTIGATION TECHNIQUES AND PROCEDURES

The first phase of this study will involve the preparation of a design for a comparative and descriptive evaluation in the areas outlined above. Insofar as possible, the plan will utilize such accepted standardized instruments of measurement as are available. These will include ability and achievement tests, sociometric devices, rating and opinion scales, questionnaires, etc. In addition, it will be necessary to develop some new investigative devices and to use less objective techniques as standardized and free interviews, controlled observation, and sampling devices. A complete record-keeping procedure for use within the school will be planned and implemented to provide critical data in relation to students, personnel, and program. Elementary schools within and without the Greenwich Public School System will be utilized.

GOAL OF THE STUDY

It is assumed that through re-deployment of teachers, re-grouping of children and utilization of a variety of teaching techniques, there will be a gain in pupil achievement, professional performance and methodology and practice. This study will make these assessments and report the findings. Further, it is hoped that determination of the techniques involved, curriculum implications, and building design will be transferable to other schools both within and without the Greenwich school system.

CONTRIBUTION BY THE GREENWICH PUBLIC SCHOOLS

The Greenwich Public Schools will provide the necessary personnel, supplies, equipment and physical facilities for the team teaching program as it is designed. In addition to this, the staff of the Department of Research and Guidance will be available to the research specialists. Special equipment and communication facilities will be furnished for the research team by the Greenwich Public Schools. Any educational costs beyond those provided in the proposed budget will be supplied from the regular budget of the Greenwich Public Schools.

DUNDEE 1962-63, 1963-64

"Team teaching is an instructional organization involving teaching personnel and students assigned to them in which two or more teachers are given the responsibility, working together, for all or a significant part of the instruction of the same group of students."[1] In the Dundee program, teachers are formed into teams, each team responsible for students at two or more grade levels extending from kindergarten through grade six.

During the 1962-63 and 1963-64 school years, the Dundee School had three teaching teams and one team of special teachers. The Stewart Team was responsible for the instruction of the students in kindergarten, grade one, and grade two; the Fraser Team for the students in grades three and four; and the MacKenzie Team for students in grades five and six. The Barclay Team was composed of the special, full-time teachers in art, music, physical education, French, and library instruction. Barclay Team members instructed the children at all team levels.

The Dundee School is situated on a farm which was named "Dundee" in the early days of Greenwich. The Town of Greenwich wrote to the Burgh of Dundee in Scotland and received permission to use the Burgh of Dundee coat of arms as the school coat of arms. In continuing this Scottish theme, the teams were named for Scottish clans. Each clan had its tartan. The dominant color in each tartan was used in identifying cubicle storage spaces, tote boxes, and for coding the central scheduling board used for room assignments.

ROLES

During the training program, a major effort was made to provide role descriptions for all personnel. This was done on the assumption that it would facilitate the execution of responsibilities by staff members and also clarify job contributions from an administrative viewpoint. The original role descriptions are included in *The Dundee Design* and excerpts are provided here.

"Team teaching believes that changes can be made in the elementary educational program which will bring about improved instructional services to children. The team teaching approach changes the organization of the traditional elementary school in such a manner that the entire staff functions cooperatively, by pooling talents and regrouping pupils for maximum utilization of teacher strengths.

"Within this pattern the entire staff functions under different relationships. Therefore, there seems to be a need to clarify these role relationships so that pupils and school staff can operate smoothly."

Team Leader

"A team leader is assigned to each of the teaching teams – Stewart, Fraser, and MacKenzie. The team leader has the responsibility for the organization, scheduling, and overview of curriculum development of the team. A $700.00 differential is provided for a team leader. There is no released time for the team leader, nor is the team leader considered a master teacher. Rather the team leader is the coordinator of the team's activities and confers directly with the principal for help and guidance. The team leader is not responsible for the supervision of the teachers on the team. This is the responsibility of the principal as the educational leader of the school. The team leader is responsible for the smooth and effective operation of his team. He helps the principal in time scheduling and in establishing and carrying out policy. He works closely with teachers in coordinating team activities, conducting meetings, delegating authority, and developing schedules within the team. In short, the team leader is primarily concerned with maintaining within his team the high quality of instruction we believe possible under team teaching."

Principal

"The principal's duties in the team teaching school, as in the traditional school, are in the areas of educational leadership, administration, and public relations. However, his role in relationship to the personnel, to the pupil, and to the public in carrying out his responsibilities, is different in conception and will be executed in a different manner. It will be his responsibility to establish an emotional framework in the school and the community which will create an optimum climate for learning.

"His function as a coordinator will be more demanding and dynamic in a team teaching school. The team structure implies that unique relationships will develop within the school, between the team teaching school and other outside social structures. Therefore, the principal must develop mechanisms whereby, between the groups, relationships can be established and lines of communication can be maintained.

"The principal will be aided in his task of managing the school by others in the structure of the team teaching organization. The administrative cabinet of team leaders will help assign use of space, time, and facilities and will schedule many of the staff duties and pupil activities. Yet he remains responsible for the total plant, personnel, supplies, equipment, and transportation. He must carry out all procedures and regulations required by the superintendent and state laws."

Senior Teacher

"Senior teachers are assigned to the Stewart and MacKenzie Teams. There is a $350.00 differential for the senior teacher. The senior teacher's main responsibility is in the development of curriculum materials and continuity of curriculum for his particular team. He directs the team in the absence of the team leader and fulfills other functions as designated by the team leader or principal.

"The senior teacher is another new position created by the team teaching situation. The senior teacher's prime responsibility lies in fulfilling his teacher role within a team. In addition, he functions in an administrative capacity when the team leader is absent or when he has been delegated certain responsibilities by team leaders.

"An additional responsibility of the senior teacher is to serve as a curriculum coordinator within his own team, and between his and the other teams in the school. The purpose here is to establish good communication within the subject matter areas covered in the instructional program by all teams." (The Fraser Team did not have a senior teacher during the 1962-63 school term. The senior teacher withdrew from the program just before the opening of the school in 1962. The team leader requested that there not be a senior teacher assigned to the team, but that the team be headed only by the team leader. This would allow a comparison to be made between the team operation with a senior teacher and a team leader on two teams and only a team leader on one. A senior teacher was added to the Fraser team during the 1963-64 school year.)

Instructional Materials Specialist

"As the title 'Instructional Materials Specialist' implies, the chief function is that of suggesting materials and ways of using them most effectively. The specialist serves as consultant to all teams on the utilization of instructional materials. A thorough familiarity with the total school curriculum and with potentially useful materials is a prerequisite to the most effective fulfillment of this phase of the instructional materials specialist's role.

"The instruction and training of teachers in the use of audio-visual equipment is the respsonsibility of the specialist. Although it may develop that certain equipment must be operated and/or supervised by the specialist, his role should be construed as one of professional leadership rather than in the narrower technical sense.

"Care and maintenance of audio-visual equipment are other responsibilities of the specialist.

"The direct supervision and administration of the Dundee School Instructional Materials Workshop (Resource Room) is the responsibility of the specialist."

Administrative Committees

"To facilitate the instructional program and operation of the school, two administrative committees were formed: the administrative cabinet and the instructional council. The administrative cabinet is composed of all team leaders and the principal. In the event of absence of a team leader, the senior teacher of that team will serve on the administrative cabinet. The administrative cabinet meets weekly to determine the direction of the instructional program and consider matters related directly to team functions and administration. The principal uses the administrative cabinet to transmit directives and information to the teams through the team leaders.

"This cabinet will handle all administrative, inter-team matters in order to insure a smoothly running school. These matters include administration of the lunchroom, transportation, scheduling, grouping, public relations, intra- and inter-school relations. This administrative group will also establish relationships and communication between the teams and with other schools.

"In certain areas the administrative cabinet will work in conjunction with the instructional council.

"The instructional council is composed of the principal, team leaders, and senior teachers. This council is concerned mainly with curriculum and new instructional innovations within the school. This council convenes bi-monthly.

"The responsibility of the instructional council is to assess the value, and recommend utilization and priority of ideas and techniques concerning curriculum and instructional methods, aids, and groupings which are of concern to the teams at Dundee. Members of this council will be responsible for bringing to the council either team thinking or individual ideas for consideration. In return, they will bring to the teams the thinking of the council.

"The instructional council is to be concerned with the investigation of and reporting on the ever-changing developments in educational thought and research."

Secretary and Aides

"A school secretary handles the usual duties and assignments of such a position. Additional clerical help is provided to each of the teaching teams in the form of clerical aides assigned to each team. The clerical aides work 37½ hours a week and take care of the clerical responsibilities of the team to which they are assigned. The aides are housed in the team headquarters area. They are non-certificated personnel.

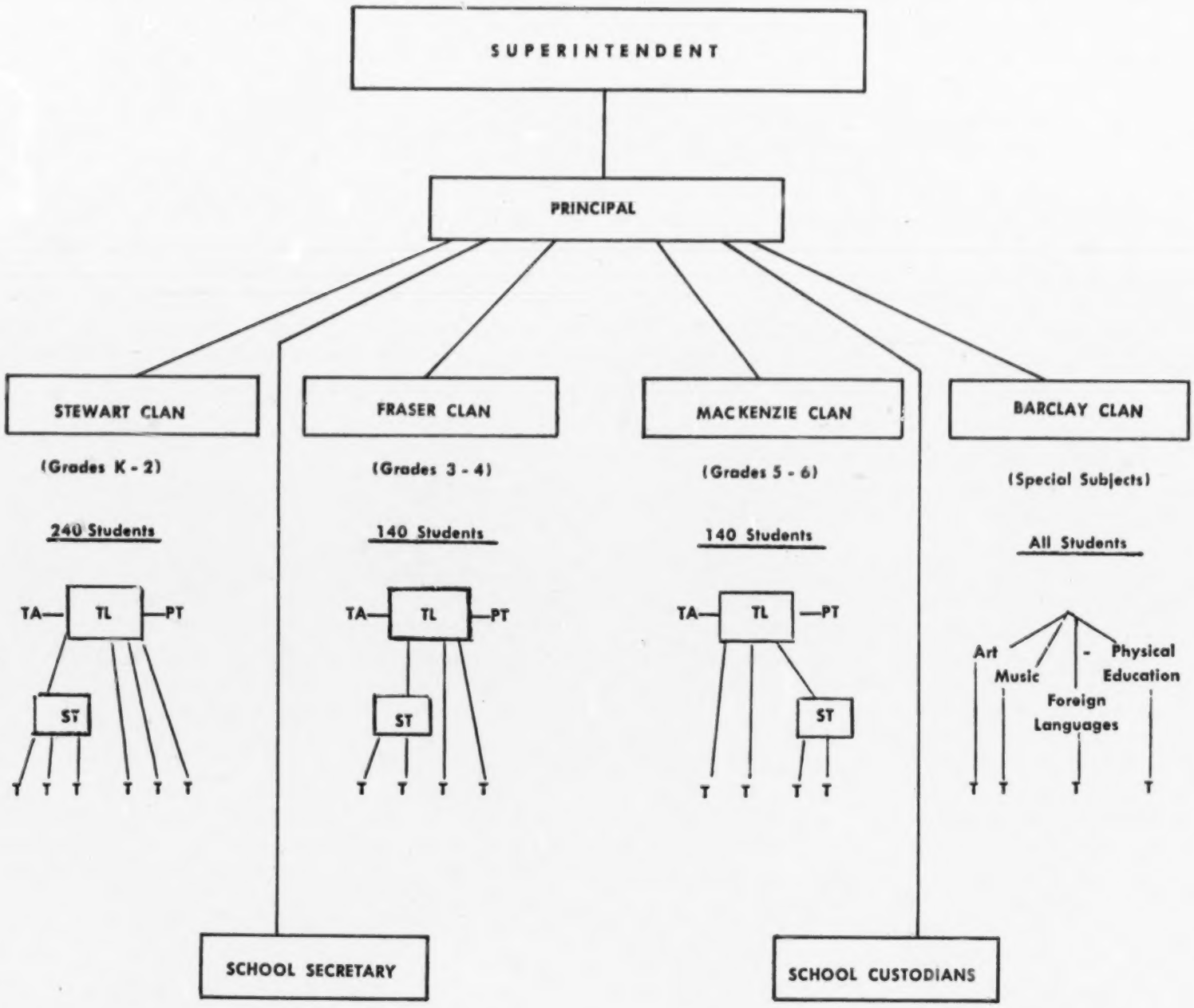
"The responsibility of a clerical aide is principally that of secretary to the team. The regular clerical duties of typing and filing also include secretarial responsibility at team meetings and routine matters of attendance, inventory, and collections.

"In addition to these, the clerical aide is to be a 'right-hand' to all teachers in the team with respect to preparing materials for instruction. The clerical aide is to be of service to all the teachers in the team, but in case of conflict of priority, she must look to the team leader for resolution of problems unless the team leader has delegated the responsibility to someone else on the team."

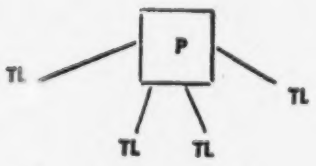
Student Teachers

"Student teachers are also included in the Dundee staff and the sponsoring institution is the University of Bridgeport, Bridgeport, Conn. The sponsoring teacher is the team leader."

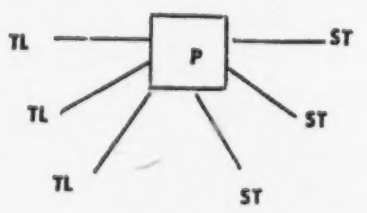
THE DUNDEE SCHOOL TEAM ORGANIZATION



ADMINISTRATIVE CABINET



INSTRUCTIONAL COUNCIL



KEY:

P —Principal
TL—Team Leader
ST—Senior Teacher
T —Teacher
PT—Practice Teacher
TA—Teacher Aide

STAFF

Stewart Team

1 Team Leader
1 Senior Teacher
2 Kindergarten Teachers
4 Teachers
—
8 Teachers (total)
1 Clerical Aide
1 Student Teacher

Fraser Team

1 Team Leader
1 Senior Teacher
5 Teachers
—
6 Teachers (total)
1 Clerical Aide
1 Student Teacher

MacKenzie Team

1 Team Leader
1 Senior Teacher
4 Teachers
—
6 Teachers (total)
1 Clerical Aide
1 Student Teacher

Barclay Team

1 Art
1 Music
1 French
1 Physical Education
1 Librarian
—
5 (total)
1 Librarian Clerk

Traveling Specialists

1 – Reading
1 – Social Worker
1 – Speech
2 – 1 String and 1 Brass Music Instructors
1 – Psychological Examiner

Full Time

1 – Principal
1 – School Secretary
24 – Teachers
3 – Clerical Aides
3 – Student Teachers
1 – Librarian
1 – Librarian Clerk
1 – Nurse
3 – Custodians
4 – Cafeteria Workers
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PHYSICAL PLANT

The Dundee School was designed specifically for team teaching by the architectural firm of Perkins and Will, Chicago, Illinois. At the time of the conception of the idea of a school to be designed for team teaching, there were no existing schools for comparison; so the architects studied the concept of team teaching and translated the needs into a physical plant which would provide the flexibility needed for this new pattern of instruction.

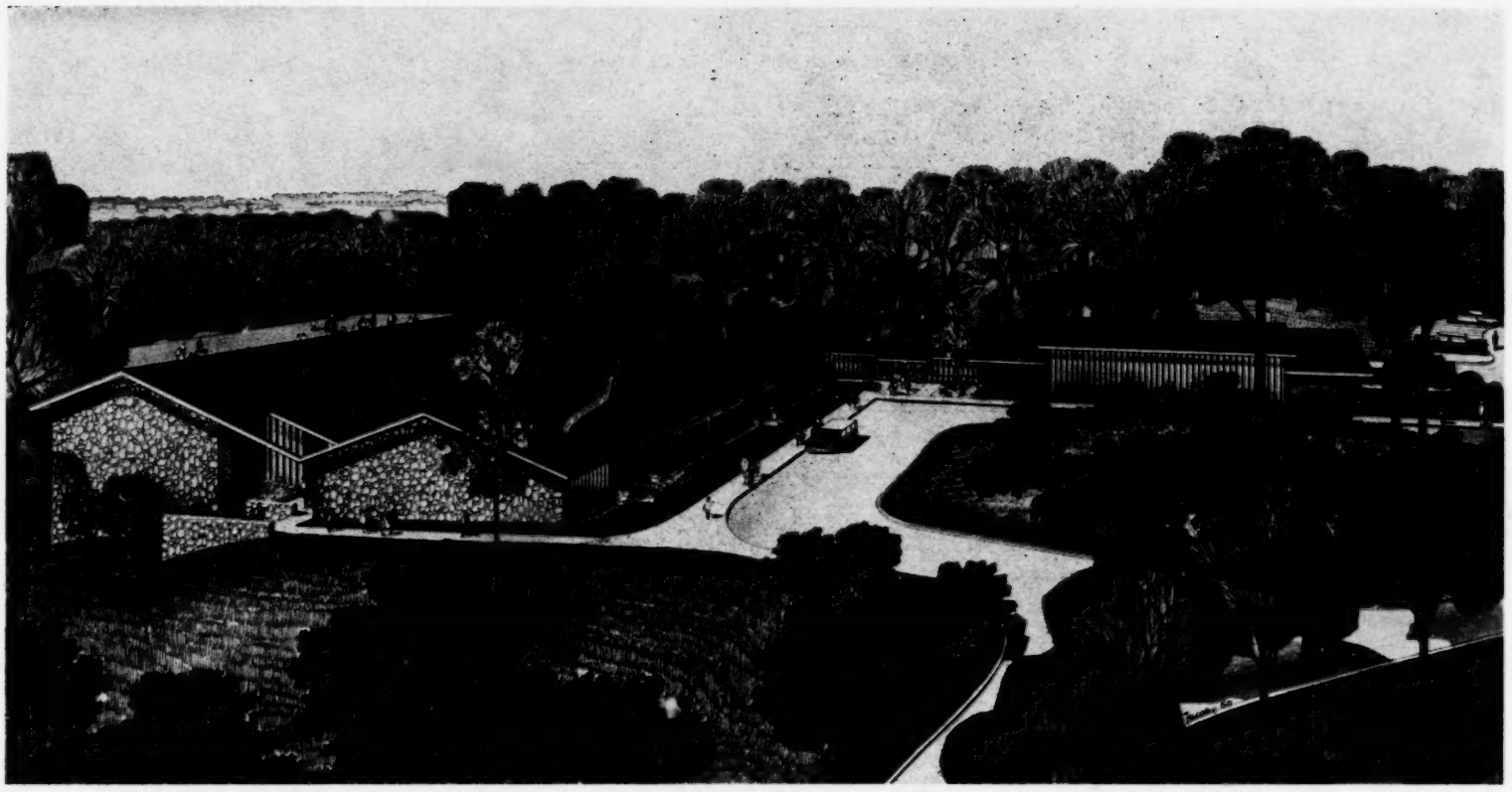
The Dundee School is located in the North Mianus section of Greenwich at the intersection of Florence Road and MacArthur Drive. The land encompasses fourteen acres. The final construction cost total was $987,763.00.

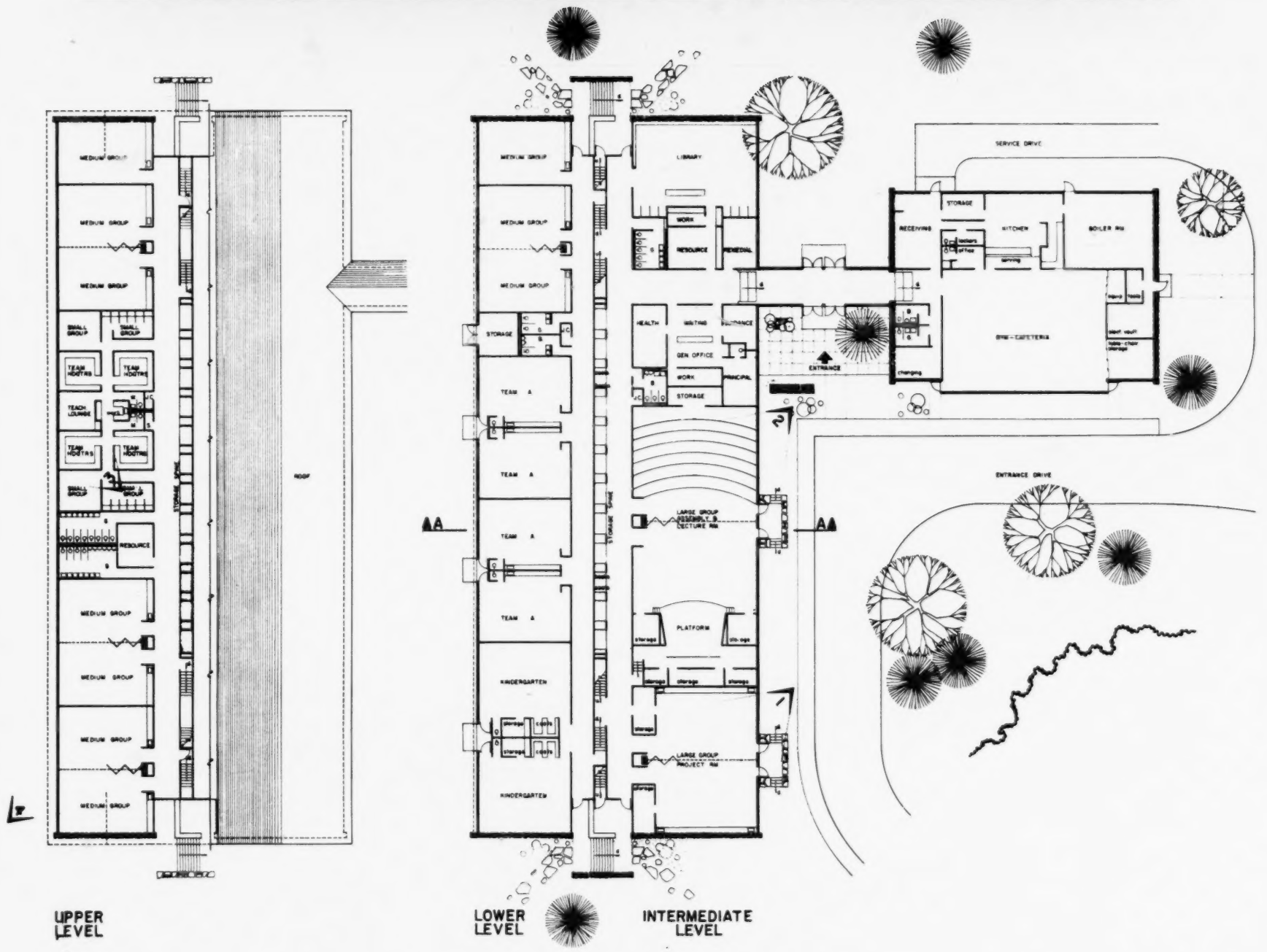
The plant features a split level (three levels) design, running north and south and a graded ramp running east to west, leading to a fourth level which houses the cafeteria-gymnasium and heating plant.

The exterior of the building is faced with fieldstone and molded metal paneling. To the west of the building is a play field area which has playground equipment of graded sizes for children in the primary and intermediate grades. The northeast section of land provides parking space for teachers and visitors. A circular driveway in the front gives access for cars and buses.

Building Interior

The interior of the building has cherry wood cabinets, doors, and wall surfaces. There are twenty rooms for classroom instruction, two individual study rooms, three small group study rooms, one library, a team headquarters cluster (composed of four team rooms, a work area, rest rooms, lounge, and conference room), a central administration area, a resource center, a gymnasium-cafeteria, a custodial area, a kitchen, and a boiler room.





UPPER LEVEL

LOWER LEVEL

INTERMEDIATE LEVEL

There are five sound-retardant partitions separating rooms which may be opened to provide varied spaces for class activities. A unique feature of the building is a ten-channel audio system for radio, records, and tapes. Headsets are available for classroom use with this audio system.

PROGRAM

Although the team program changed during the two years of the evaluation, a synthesis of the major features of each individual year's program is provided for a clearer understanding of the actual day-to-day operation.

1962-63 School Year

Stewart Team — Kindergarten

The kindergarten program was a cooperative teaching activity where two teachers shared the responsibility of fifty children in each session. From September through November, a typical kindergarten activity program was instituted. Further planning consequently brought about a program of skill development. As they shared the children and the use of two rooms, the teachers offered a more advanced program than is usually given in kindergarten.

The following is an excerpt taken from a tape made by the teachers to explain to visitors the operation and organization of kindergarten:

"Cooperative teaching was begun in the kindergarten to meet the needs of children attending the Dundee School. The idea of combining classes for the purpose of carrying out an activity is not new. It is not unusual to find kindergarten teachers combining classes in order to see a film, listen to a story, sing familiar songs, etc. We have simply enlarged upon the idea that some activities can be carried out quite effectively with large groups of children.

"When we began our effort, we had three basic objectives in mind: 1. to accustom the youngsters to working with more than one teacher and in groups of varying size; 2. to utilize space and teacher time to its fullest advantage; 3. to provide for grouping with regard to the readiness skills.

"The program which you see before you represents the long-range plan for teaching this year. You will notice that the year is divided into two parts, one, an orientation period and the other, a skills period.

"During the orientation period, the children move between two play centers which are equipped for different purposes. Kindergarten A is set up for large motor play while Kindergarten B is equipped for quiet activities involving the use of the small muscles.

"The advantages of the two centers are that ample space is provided for large muscular activities without a constant movement of tables and chairs; we have a room organized for activities requiring more than the usual amount of space such as rhythms, dancing, games, and the like; and we have a center for quiet activities which can later serve in the readiness program.

"The second period of the kindergarten term is called the skills period because it is during this time that we introduce the readiness program in reading, mathematics, and writing.

"Since there is no ceiling on effort at Dundee School, our purpose in providing these skill sessions is simply to offer the more mature, the academically talented, or the merely interested youngster opportunity to take what he wants from the readiness program."

Stewart Team — Grades 1 and 2

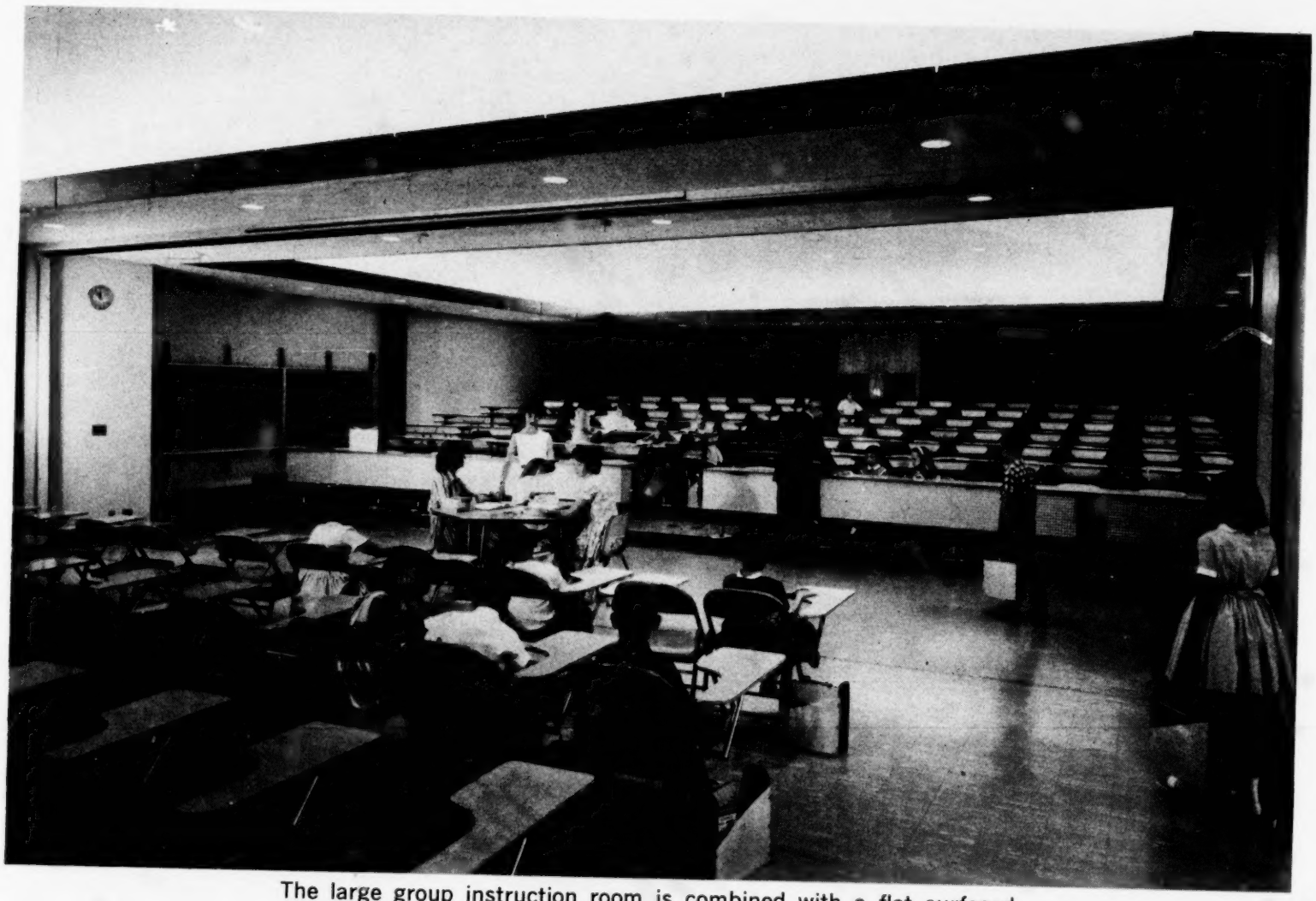
Six teachers were responsible for the instruction of the children in grades one and two. The children were grouped by performance (homogeneous) levels in language arts and mathematics and by heterogeneous grade level groups for social studies and science. Each teacher instructed a group of children in social studies, science, language arts, and mathematics. It was possible for a student to have three different teachers during the school day. About two-thirds of the time was spent with the language arts teacher.

In the performance level groupings, a teacher prepared her own materials for instruction and was aware of the fact she must know what was being taught teamwide if children were to move from group to group. In social studies and science, the team operated in a unit sequence; one teacher prepared a basic unit, the team refined it, and then all teachers used the same unit for instruction. The curriculum in social studies and science was designed to operate on an alternating two-year sequence, thus allowing the use of the unit materials for first and second grade children at the same time. The team met twice a week to plan the instructional program, grouping procedures, and scheduling activities.

All of the Stewart Team rooms were located on the lower level of the school building. The teachers remained in their rooms throughout the day and the students moved from room to room according to the individual schedules. Representative schedules included in *The Diary of the Dundee School* in each volume (volumes I-XII) are not reproduced here because of their detail.

Analysis of teacher groupings for the Stewart Team, Grades 1 and 2

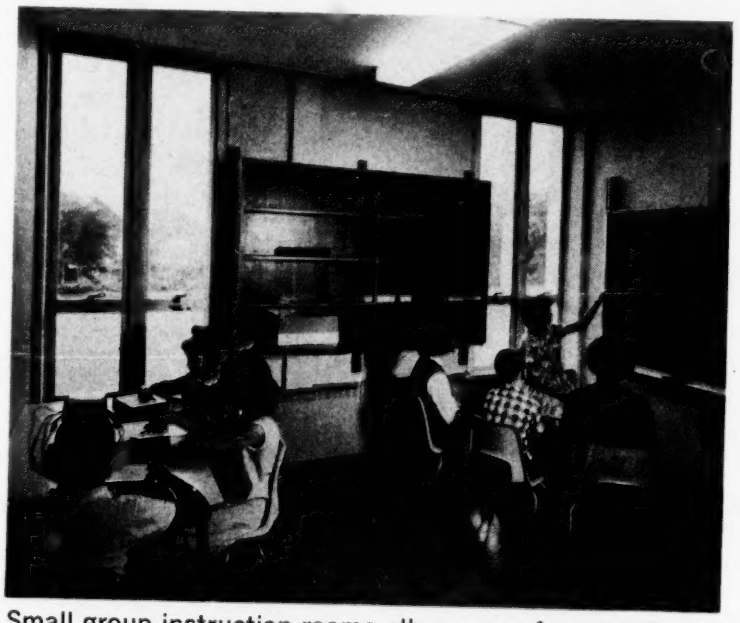
Teacher	Social Studies/Science	Language Arts	Arithmetic
A	Room L-1, First Grade	Group One	Group Two
F	Room L-2, First Grade	Group Two	Group Three
D	Room L-3, First Grade	Group Three	Group One
O	Room L-4, First Grade	Group Four	Group Six
E	Room L-5, Second Grade	Group Five	Group Four
E	Room L-6, Second Grade	Group Six	Group Five



The large group instruction room is combined with a flat surfaced area to provide an auditorium with a seating capacity of 350 students.

Fraser Team — Grades 3 and 4

The Fraser Team was composed of a team leader and five team teachers. There were six groups in language arts and five groups in social studies, science, and mathematics. Mathematics and language arts were homogeneous groups and social studies and science were heterogeneous groups. The students were designated by levels rather than grades. Level One denoted the third grade and Level Two the fourth grade. Occasionally level one and level two groups were combined for instruction in social studies and science, depending upon the curriculum. Homogeneous or performance groupings extended over the two-grade level span and were used in reading, language arts, and arithmetic. Each teacher was assigned to a level one or level two homogeneous base group. Each teacher was also assigned to a performance level grouping for language arts, reading, and arithmetic. A student could be transferred from group to group throughout the year in the performance groupings, dependent upon team consideration and determination of the student's ability. Both students and teachers moved from room to room and used the middle and upper floor rooms. Each teacher was responsible for the preparation of materials for instruction in his performance level groups. Units were prepared by individual teachers and refined by the team for social studies and science. The team met twice weekly for planning purposes. *(See Fraser Team Teacher Groupings on next page.)*



Small group instruction rooms allow space for a teacher to work with three students for a Spanish lesson while others participate in individual work with the audio notebooks.

Analysis of teacher groupings for the Fraser Team, Grades 3 and 4

Teacher	Social Studies/Science	Language Arts	Arithmetic
K	Level One	Group One	Group Three
O	Level One	Group Five	Group One
J	Level One	Group Three	Group Two
M	Level Two	Group Two	Group Five
N	Level Two	Group Six	Group Four
L	No Home Base	Group Four	Group Six

MacKenzie Team — Grades 5 and 6

The MacKenzie Team was composed of a team leader, senior teacher, and four team teachers. There were six homogeneous groups in language arts and homogeneous groups in arithmetic. Semi-specialization in social studies and science brought about the arrangement whereby three teachers were responsible for all of the teaching of social studies, and three teachers were responsible for all the teaching of science.

Teachers and students moved from room to room throughout the day. Because of the semi-specialization and the other variations of grouping, it was possible for a student to meet with all of the teachers on the team. The team met twice weekly for curriculum and policy determinations. *(See MacKenzie Team Teacher Groupings below.)*

The 1963-64 School Year

The program during the 1963-64 school year was similar in design to that of the first year. The same number of teachers were employed, but the distribution for the teams was different. The Stewart Team had seven teachers as opposed to six the first school year. The Frazer Team remained the same with six teachers. The MacKenzie Team had five teachers. One of the teachers of the Fraser Team (the instructional materials specialist) taught an arithmetic group on the McKenzie Team. A senior teacher appointment was made for the Fraser Team.

Stewart Team — Kindergarten

The Kindergarten program operated in the same manner as the first year with two teachers working with fifty students in the morning and fifty students in the afternoon. The kindergarten program is described in more detail in the 1962-63 school year material.

Stewart Team — Grades 1 and 2

The Stewart Team was composed of a team leader, one senior teacher, five team teachers, and one clerical aide. There were seven performance groupings in language arts, seven performance groupings in arithmetic, and seven home base social studies/science groups. The curriculum was in its second year of the two-year sequence for social studies and science. All of the teachers on the team used the same unit material for social studies/science. All of the rooms were located on the lower level and the students moved from room to room throughout the day according to the individual schedules. The students had a maximum of three teachers a day, for each teacher instructed in all subjects. *(See Stewart Team Teacher Groupings on next page.)*

Analysis of teacher groupings for the MacKenzie Team, Grades 5 and 6

Teacher	Home Base Unit	Reading	Arithmetic	Social Studies	Science
S	Room M-12	Group 6	Group 2	Teacher: Q, T, P	Teachers
U	M-3	Group 4	Group 4		S, U, R
Q	U-1	Group 1	Group 6		
P	M-4	Group 2	Group 5		
T	M-11	Group 5	Group 1		
R	U-2	Group 3	Group 3		

Analysis of teacher groupings for the Stewart Team, Grades 1 and 2

Teacher	Social Studies/Science	Language Arts	Arithmetic
A	Grade 1	Grade 1	Group 3
B	Grade 1	Grade 2	Group 6
C	Grade 1	Group 3	Group 1
D	Grade 1	Group 4	Group 2
E	Grade 2	Group 5	Group 5
F	Grade 2	Group 6	Group 7
G	Grade 2	Group 7	Group 4

A typical day's schedule (Stewart Team):

8:45- 9:30 a.m. Arithmetic
9:30-10:15 a.m. Science and/or Social Studies
10:15-11:45 a.m. Language Arts
11:45-12:15 p.m. Lunch
12:15-12:30 p.m. Recess
12:30- 2:30 p.m. Language Arts

Subjects were scheduled in blocks for the team, each of the teachers teaching the same subject at the same time, but with his separate group. All of the special subjects came out of the language arts block of time throughout the week.

A typical day's schedule (Fraser Team):

8:45- 9:45 a.m. Arithmetic
9:45-10:45 a.m. Language Arts
10:45-12:15 a.m. Reading
12:15-12:45 p.m. Lunch
12:45- 1:30 p.m. Science
1:30- 2:30 p.m. Social Studies

Scheduling was done in a block sequence, and the special subjects were taught during the language arts and social studies time.

Fraser Team — Grades 3 and 4

The Fraser Team was composed of one team leader, one senior teacher, four team teachers, and a clerical aide. The team was organized into two levels: grade 3 was Level One and grade 4 was Level Two. There were six homogeneous performance level groups in arithmetic, six homogenous performance level groups in reading, and five heterogeneous groups in social studies/science. One teacher on the team, the instructional materials specialist, taught one arithmetic section of the MacKenzie Team students, one arithmetic section of Fraser Team students, and one reading section of Fraser Team students. The remainder of his time was devoted to the preparation of instructional materials and the operation of the central audio system. *(See Fraser Team Teacher Groupings below.)*

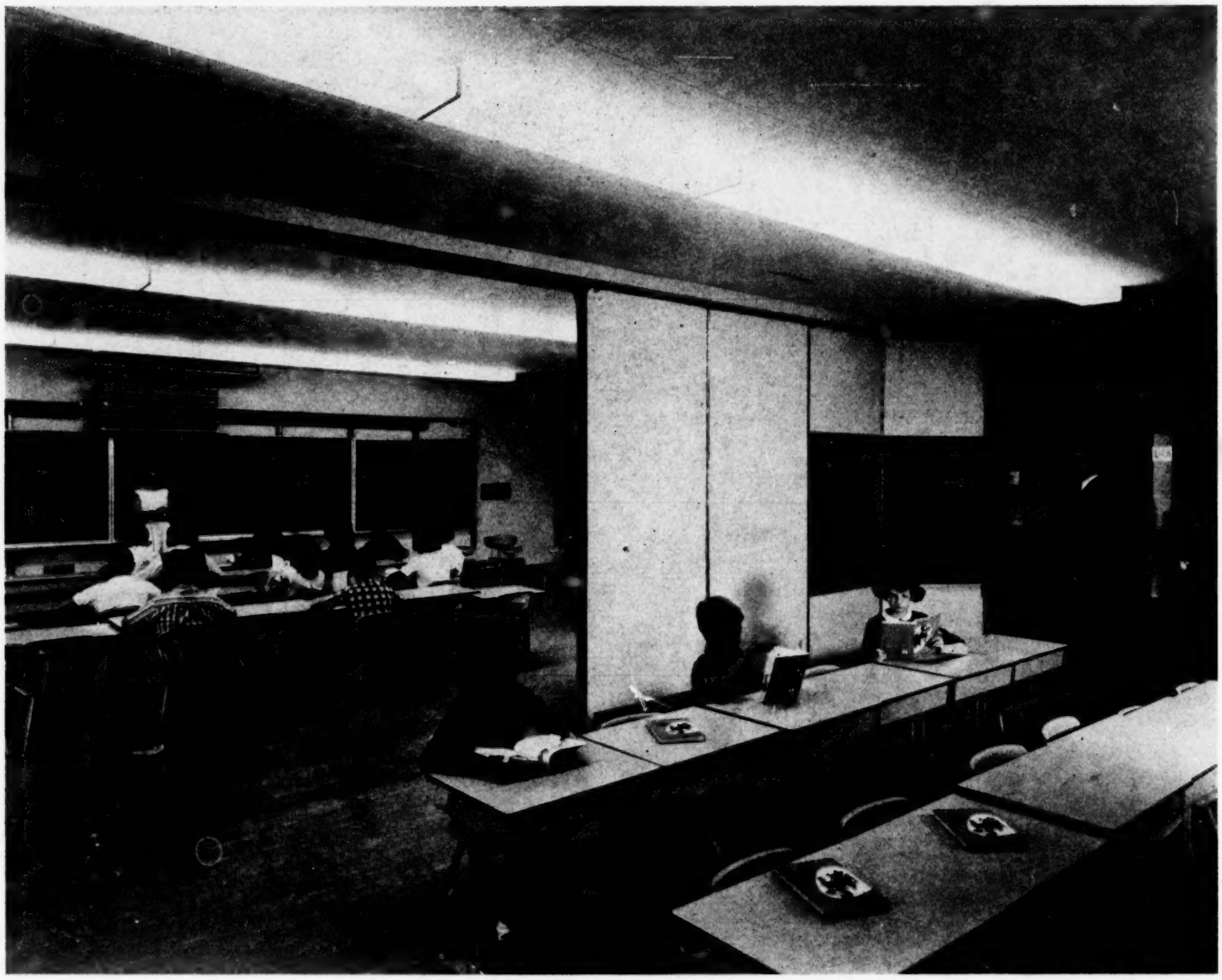
MacKenzie Team — Grades 5 and 6

The MacKenzie Team consisted of one team leader, one senior teacher, three team teachers, and a clerical aide. Semi-specialization was followed in social studies and science. Three teachers taught social studies to all of the students on the MacKenzie Team, and three teachers taught science to all the students.

There were eight groupings in reading, language arts and independent activities, and there was specialization in those subject areas. Some teachers taught only reading, language arts, or the independent activities. The addition of services of a member of the Fraser Team made possible six groupings in arithmetic.

Analysis of teacher groupings for the Fraser Team, Grades 3 and 4

Teacher	Reading	Language Arts	Arithmetic	Social Studies/Science
H	Group 1	Group 1	Group 3	Level One
I	Group 2	Group 2	Group 4	Level One
J	Group 3	Group 3	Group 1	Level One
K	Group 4	Group 4	Group 5	Level Two
L	Group 5	Group 5	Group 6	Level Two
M	Group 6	Group 6	Group 2	Level Two



Five folding soundproof walls give additional space for varied instructional activities.

Analysis of teacher groupings for the MacKenzie Team

Group	1	2	3	4	5	6	7	8
Reading	P	M	M	G	P	M	M	G
Language Arts	P	O	R	R	P	O	O	O
Independent Activity	P	GP	GP	HP	P	GP	GP	GP
Arithmetic	G	O	P	T	M	M	F	

Typical day's schedule (Mackenzie Team):

8:45-10:45 a.m.	Language arts, independent activities, reading
10:45-12:45 p.m.	Social studies and science
12:45- 1:15 p.m.	Lunch
1:15- 2:30 p.m.	Arithmetic

Storage for books and maps is available on all three floor levels. The middle hall shown here has space for 212 students in thirteen recessed areas.

THE RESEARCH REPORT

THE RESEARCH REPORT of the Dundee Team Teaching Project was released by the Teachers College, Columbia University staff members, headed by Dr. Willard Elsbree, in February, 1965. THE RESEARCH REPORT, 405 pages in length, follows closely the original design for evaluation described in the letter requesting funds for such purposes from the Fund for the Advancement of Education. Dr. Elsbree, Dr. Foshay, Dr. Lindeman, and Dr. Wayland were assisted by ten graduate students during the two-year period.

The pages that follow present a condensed version of the findings. For a complete view of the evaluation, the reader should refer to the original report.

In their introduction to THE RESEARCH REPORT, the authors explain its limitations and its form: "While educators and citizens in general would undoubtedly like to obtain correct and final answers to questions of curricular organization, this appraisal of the Dundee team teaching experiment was not undertaken with any such high ambitions in mind. To find such answers would require more exact measurements than could be undertaken in this study. Indeed, it seems unlikely that appraisal instruments now exist which, if used, would fully answer all of the questions bearing on the effectiveness of school organization. . . . This study of team teaching is limited to the plan used in a single school. It is therefore largely descriptive."[2]

Each of the four professors completed a section of the report in his particular field of specialization. Dr. Elsbree was responsible for administration, Dr. Foshay for curriculum, Dr. Lindeman for student achievement, and Dr. Wayland for the sociological aspects of the team program.

The information related here follows the sequence and organization of their report.

ADMINISTRATION

The Administration Section is organized under five headings: Organization and Administration of Team Teaching in the Dundee Elementary School; Selection and Orientation of Staff Personnel; Administration of the Instructional Program; Facilities and Equipment; and The Cost of Team Teaching at Dundee.

Organization and Administration of Team Teaching in the Dundee Elementary School

After examining the structure and organization of the school, the consultants were ". . . in general agreement that the grade division of the teams appear to be logical and appropriate from an administrative point of view. However, currently the kindergarten, while assigned to the Stewart Team, is not as closely integrated into the primary unit as grades one and two."[3]

The Barclay Team, although organized as a team in the structure chart, was observed to ". . . meet less and less frequently (as a team) and the second year did not meet as a team at all."[4] This occurred as the Barclay Team members began to ". . . function independently, as an individual specialist would in a conventional school organization."[5] The consultants raised the points ". . . whether a group of special teachers in itself constitutes a team, even theoretically"[6] and "from an administrative point of view there appears to be little if any justification in attempting to preserve a structure in theory which everyone knows does not exist in fact."[7]

Divergent views from team leaders on what they should do and what duties were assigned to them brought the conclusion: "It is reasonable to believe that cooperatively undertaken, the development of well-defined position descriptions for team leaders would serve both to facilitate performance and avert personal frustration."[8]

The role of the senior teacher was found to be equally vague and conclusions at the end of the section stated: "Dundee would have profited from an early statement of well-defined duties and responsibilities . . . original job descriptions were not sufficiently detailed to insure proper job performance."[9] The evaluators believed that schools attempting the initiation of a team teaching program should ". . . distinguish clearly between the specific duties and responsibilities of the members of each classification in the hierarchy."[10]

In viewing the administrative aspect of the program and the assignment of duties there was a vagueness observed in the role of the principal as opposed to the role of the team leader. Once again the consultants indicated that original role definitions completed with clarity could have helped alleviate such problems as noted.

Selection and Orientation of Staff Personnel

In considering the selection and orientation of teachers, the report examines the training program briefly and then analyzes the results of the orientation program in relationship to the successes of the teachers when faced with the actual experience of team teaching.

In interviews with teachers who had not participated in the preservice orientation program and had not had any experience with team teaching prior to their arrival at Dundee, it was ". . . apparently felt that no more formal induction is needed than that which can be gained from the continuous daily involvement of teachers in the team operation, under the guidance of the team leader and senior teacher."[11] The report further stated that: "The problems experienced in inter-team

coordination and leadership role perception, however, indicate that a program of inservice training, beyond that considered inherent in the team meetings, might well be introduced. This is especially apparent in the case of team leaders, where the demand for administrative skill suggests a need for some specialized professional training. An extended preservice training program such as the Dundee staff underwent certainly appears sound and appropriate. However, none of the orientation was geared to the supervisory or administrative functions of staff leaders."[12]

During two-year evaluation, seven members, or thirty percent, of the Dundee staff, in addition to the principal, did not continue at Dundee. In the minds of the evaluators this would ". . . raise some serious questions as to the morale of the staff."[13] (Although not indicated in the report, the majority of the staff members fulfilled a five-year commitment to Dundee including the experience of the training period.)

They found that none of the team leaders or senior teachers had any previous experience in supervision or administration, or any university training in these areas. They concluded: "It is quite likely that this inexperience and lack of training account in part at least for the tendency of the teams to operate as individually autonomous units rather than as coordinated elements of a single, total staff."[14]

For the selection of the staff they suggested that ". . . recruitment must be expanded beyond the boundaries of the local school system. If it continues to be confined, as in the formation of the original Dundee staff, many teachers with superior qualifications will be excluded."[15]

Administration of the Instructional Program

This section deals with the administration of the instruction program, not with its content, operation, or effectiveness.

In examining the supervisory functions of the principal and team leaders, it is noted that ". . . even though the leadership role of the principal is shifted from the classroom unit to that of the team, his responsibility for the effectiveness of the total program remains no less essential. Even the heavy reliance upon team leaders which is implied in team organization does not obviate continuous direction by the principal in instructional affairs."[16]

A problem that arises because of the responsibilities delegated to team leaders is commented upon by the consultants: "It is unfortunately possible, however, for the principal to become so diverted by non-instructional problems as to lose the advantage of this new freedom entirely and place undue reliance upon team leaders for the supervision of instruction."[17]

In the original design of the team program the instructional council was created to ". . . assess the value, and recommend utilization and priority, of ideas and techniques concerning curriculum and instructional methods, aids, and groupings which are of concern to the teams at Dundee."[18] The report states: "Team leaders have expressed little regard for the instructional council as conducted by the principal."[19] The consultants did not believe that the ineffectiveness of the council rested entirely with the principal, for ". . . the success of such a group does not rest entirely in the hands of its leader. All participants must bear in mind the practical opportunity for the promotion of common interests."[20] The council met only sporadically and therefore was not an effective means of communication.

In suggesting means for the improvement of communication within the school, the following were suggested:

1. "Distribution of the minutes of all council and cabinet meetings, as well as copies of team leader notices to the entire staff.
2. "Define broadly, but clearly, the areas of professional domain in which team leaders serve in an official, intermediary capacity.
3. "Define and clarify policies such as discipline and pupil supervision.
4. "Allow opportunities for all teachers, above and beyond team lines, to give expression to their reactions, ideas and needs and thus to profit from an extensive interchange.
5. "There is a place for frequently scheduled and productively planned faculty meetings. Do not allow them to be superseded by team meetings, and especially cabinet and council meetings. In the absence of faculty-wide discussion of matters of common concern, uniform understanding and thus overall staff effectiveness are diminished."[21]

In the Dundee School, as in the other Greenwich schools, the principal is responsible for the evaluation of teachers. For teachers who have been with the Greenwich schools three years or less a rating form must be completed by the principal and forwarded to the Central Office. In relation to the team structure and the positions of the team leaders, the consultants observed: ". . . perhaps the greatest weakness in the existing evaluation procedure is the fact that team leaders do not participate in the evaluation of their own teachers nor is the principal expected to consult them officially in making his reports. Perhaps team leaders should be given an advisory role, well publicized to avoid misunderstanding, in evaluating teacher performance and the principal be charged with the final rating."[22]

Dundee faced the usual problems in preparation of cumulative record forms that other schools encounter but ". . . the problem of suitable grading standards, however, is distinctly more troublesome in the team organization than it is in the traditional school organization."[23]

"The use of cross-grading, ungraded teaching units and the various other grouping practices in Dundee render the district policy of strict adherence to grade

level standards difficult to apply."[24] The problem of grading, and recording of marks was handled differently by each team, and this can lead to problems when a child leaves one team and moves to another. The consultants did not consider this an overwhelming problem for they felt ". . . this should not be beyond the resources of the teams to settle effectively."[25]

Suggested improvements:

1. "Under conditions of ungraded instruction, cross grading and achievement grouping, both the grading standards and the techniques of reporting progress must be revised to suit these specialized practices.
2. "Development of an evaluation policy which is uniformly understood and applied by the staff.
3. "Allow the entire staff the opportunity to approach the problem on a school wide basis."[26]

Facilities and Equipment

At the time Dundee was planned and built, there were no other team schools in operation for comparison of established standards. "The planning of the Dundee School was all the more formidable in the absence of such standards. Yet the consultants feel that this obstacle has been overcome successfully and that the building is well suited to the specialized needs of team teaching.

"The only problem which appears to have developed in connection with this design is the changing enrollment among the three teams. The spatial capacity of the respective team instruction areas does not always conform to enrollment demands. While most schools face similar problems, erratic shifts in enrollment at Dundee may be more disturbing due to the layout of the school and the traffic patterns involved in frequent room changes throughout the day."[27]

The Cost of Team Teaching at Dundee

Regarding the question of costs the consultants believed that in this incipient stage, ". . . the cost of team teaching depends primarily on the extent to which a community is willing to support creative, promising innovations, which may or may not prove to be essential to team programs as they mature. If economy is the desideratum, the question is then whether the costs of a team experiment may be offset by economies elsewhere in the total planning of expenditures."[28]

A self-contained school in Greenwich of comparable size and recent construction was compared for plant and equipment cost with Dundee. Personnel and related costs were also compared to determine whether or not team teaching was a more expensive method of supplying instruction. Although the analysis was not carried out in great depth, the consultants said: "The . . . analysis does not pretend to be conclusive. It is nonetheless significant in the opinions of the consultants, that a complete program of team teaching, including total costs for plant and personnel, has been possible within the limits of conventional school costs in Greenwich."[29]

Conclusions of Administration Section

The following conclusions were offered:

"The introduction of a hierarchy in school staff organization is certainly the most fundamental of the innovations engendered by team methods of instruction within the realm of administration. The existence of team divisions, team leaders and senior teachers creates a new dimension of authority in the school environment. And yet, to the extent that Dundee is an example—the impact of this change upon the major responsibilities of the principal and the processes of administration conventionally employed has not been dramatic. Primarily, it has resulted in a shift in emphasis upon certain of the principal's functions and methods of operation.

"The lack of role clarification has pervaded much of the discussion in the administration portion of this study. It underlies several of the problems which have developed in the school, chiefly in the area of staff relations, and has been traced by the consultants back to selection procedures. However, in fairness to the Dundee project, it must be said that the formation of a staff charged with the undertaking of specialized, untried tasks cannot be expected to proceed with precise conceptions of roles and needed skills in mind. The important thing under such conditions is that the necessary modifications and refinements are made as the experiment runs its course."[30]

THE TEAM TEACHING CURRICULUM

The Team Teaching Curriculum section is organized under nine subheadings: The Team Teaching Curriculum; The Curriculum at Greenwich and at Dundee; Scheduling; The Grouping of Students; Materials of Instruction; Team Planning; Styles of Teaching; The Teaching of Social Studies and Sciences at Dundee; and Views of the Teaching Staff.

The report states that the curriculum section ". . . seeks to trace out the impact of team teaching, and only team teaching, on the curriculum of the school. It therefore does not include a close study of the teaching of those subjects (such as physical education, reading, spelling, mathematics, music, French, and others) manifestly less influenced by the fact that Dundee is a team teaching school."[31] (Curriculum was defined as the subjects planned and taught in the school.)

The following sources of information were used to observe a unit of work in social studies and sciences at each team level and to analyze the curriculum and teaching:

1. "Tape recordings of all the team planning sessions during November and early December, 1963; 2. transcripts of two interviews with each member of the school staff; 3. the responses of the entire staff to three

questionnaires; 4. more than 40 hours of close observation in the classroom of which 32 hours were tape recorded and analyzed; 4. school records of lesson and unit plans, schedules, the use of materials of instruction, and Greenwich curriculum guides."[32]

In the Greenwich schools, curriculum guides are provided from the central office and the consultants observed, ". . . a high correspondence is found between what is taught at Dundee and what is recommended for Greenwich generally."[33] The teams did depart occasionally from the guides and it was felt these departures ". . . were a very likely consequence of the intensive planning efforts brought about by the team teaching organization."[34]

The consultants found scheduling far from rigid. Even though schedule changes were often made on short notice, they did not seem to interfere with the smooth running of the teams. The schedules adhered closely to the time allotments suggested by the central office guides.

Grouping

The consultants reviewed the types of groups found in the school and found that a pattern emerged in the teaching of social studies and science in which ". . . the youngest children do the smallest amount of subgroup work and largest amount of whole class instruction. The children in the MacKenzie Team do the largest amount of independent work, have the largest number of large group lessons and conduct the greatest variety of kinds of class work. The Fraser Team falls between the two."[35]

A frequent criticism of homogeneous grouping is its rigidity in the placement and classification of students. The report responds to this by saying: "The homogeneous grouping of the children for skill subjects is much less rigid at Dundee than it usually is in schools where homogeneous grouping is used. The children are under frequent discussion in the team planning sessions, and the progress of the children comes under frequent review. One result of this is frequent movement of children from one ability group to another as they grow and change."[36] In contrast to the rigidity of placement and the failure to respond; this would seem to be a highly desirable off-setting practice."[37]

Materials of Instruction

In their observation of the lessons, the consultants commented: "The use of instructional aids at Dundee was much more common than is usual in American elementary schools. The heavy use of and reliance on audio visual materials appears to grow directly from the team planning."[38]

Forty-five hours of planning meetings were recorded and analyzed by the consultants.[39] In approaching the planning analysis, the consultants considered carefully the conduct of the meetings, the functions being discussed and presented, and the discussions based on the subject matter being treated.

The team leader usually was the chairman of the meeting and, ". . . even when meetings were directed by the senior teachers, the team members seemed to defer to the team leader."[40]

More direct attention to the development and maintenance of efficient planning would seem to be called for, because ". . . a number of the meetings were in the judgment of the observers relatively inefficient in that the discussions cycled back over the same subject matter, without either a summary or a decision. In some cases, the discussions became over-detailed, when it seemed apparent the detail should have been assigned to some individual or pair of people."[41]

It was found that ". . . the teams spent more time discussing non-teaching functions than they spent on teaching functions (40% discussing teaching, 60% on the managerial and communications functions)."[42]

It was the consultants' opinion: "That if one were to add the time spent on planning for teaching during team meetings to the time that is spent by the Dundee teachers in formal discussions and in individual planning for teaching, the staff would be found to spend at least as much time planning for teaching as in the case in university laboratory schools and in those public elementary schools in which a rather large amount of time is spent by the staff preparing for teaching."[43]

Styles of Teaching

The expectation at the beginning of the study, and supposition after some exploratory observations, was that teachers at Dundee would be found to teach no differently from teachers of comparable background at other suburban elementary schools, and that no observable "team style" of teaching was likely to exist.

For gathering and analyzing information about teaching, the consultants developed a technique by which ". . . audible events of a lesson were tape recorded on one track of a two-track tape, while a trained observer recorded on second track of the same tape a factual account of non-audible events as they took place."[44] Lessons were analyzed on the subject matter, the form of the subject matter, the teaching media, the form of the lesson, the grouping and location of pupils and teachers, and influence techniques used.

It was found that ". . . members of the same team or of the same subteam teach more like one another than like members of other teams or subteams."[45] "Each team has certain typical or even unique procedures."[47] Yet on the other hand, it was observed: ". . . while each team has a number of strongly similar lessons, some lessons given by members of the same team are entirely or almost entirely dissimilar."[47]

The results of the analysis show however that ". . . the comparison of thirty-two science and social studies lessons points to the existence of 'team styles' of teaching in the MacKenzie, Fraser, and Stewart teams."[48] "At Dundee, in other words, teachers who plan together teach alike much more often than teachers who do not plan together, but who teach the same subject or the same children."[49]

The Teaching of Social Studies and Science at Dundee

In endeavoring to find if team teaching has a constructive effect on the quality of the curriculum, the subject matter was examined for intellectual depth. The consultants were critical at this point: "In general the teaching of social studies and science at the Dundee School is almost wholly at the level of concrete facts and information. The one very striking exception to this was in a science unit, 'Kitchen Physics', taught in the fifth and six grades."[50]

"In general, one is led to the conclusion that you cannot get out of the treatment of subject matter what you don't put in, and that the teachers at Dundee, like the writers of the Greenwich course of study, view the field of the social studies as an area of fact and information. . . . The team organization, of itself, does not furnish ideas about the social studies. The ideas have to be put in, either from the mind of a member of the team, or from the school system, or via a special consultant. They will not generate of themselves."[51].

Views of the Teaching Staff

To obtain the views of the teachers concerning team teaching, questionnaires given three times (August, 1962, May, 1963, December, 1963) to the teachers asked their definition of team teaching, the advantages and disadvantages of team teaching for teachers and for students, the effect of team teaching of the use of instructional materials, the effect of team teaching on the conception of subject matter, and the effect of team teaching on teaching methods. From the tabulations of the questionnaires, it was indicated that

1. By and large, the teachers liked team teaching and didn't see many disadvantages for students, nor did they observe disadvantages very often.

2. They seemed to think that flexible grouping, better provision for individual needs, and the opportunity to work with several teachers were the major advantages for the children.

3. The teachers become deeply engaged, both emotionally and intellectually, with the teams to which they belong.

4. The extensive use of materials in class was attributed to the group planning sessions, where the material was frequently discussed.

5. According to the teachers, the team program was too time-demanding.

The consultants felt that the predictions of former Superintendent Smith were generally borne out. "His predictions had little to do with the level of the conception of subject matter to be taught. The criticism in this regard do not invalidate the success of the predictions he did make."[52] (Dr. Smith's expectations of the team program are found in this publication, *Team Teaching, An Approach to Elementary School Instruction*). Some further conclusions that were reached by the consultants:

a. "Team teaching had the effect of considerably extending the detail and possibly the precision of subject matter teaching. It did not deepen the treatment of the subject matter.

b. "The success of the team planning is clearly related to the success of the team teaching.

c. "Each of the teams at Dundee functions like a 'school within a school'.

d. "Team teaching implies openness to in-service training.

e. "The knowledge of individual children by the members of the teaching teams seemed to be no less than is usually the case.

f. "Team teaching has not produced herding regimentation.

g. "No evidence is apparent of the development of new instructional techniques to take advantage of large group instruction.

h. "The use of instructional materials seems to have been enhanced by team teaching."[53]

STUDENT ACHIEVEMENT IN THE DUNDEE SCHOOL

To assess achievement in the team teaching program, a plan was devised to use as controls* two elementary schools similar to Dundee in size, educational and economic background. The cooperation of two neighboring communities was achieved and a design was outlined for purposes of comparing pupil performance under team teaching with that in the participating schools organized in a more traditional manner.

The term *achievement* was used by the consultants, ". . . primarily in the cognitive sense" and to deal ". . . essentially with academic skills and abilities in its assessment."[54]

The characteristics of team teaching which were considered most likely to have a positive effect on student achievement were: 1. "those which tend to increase the extent to which instruction may be individualized, and 2. those which tend to increase the range of teacher talent which is brought to bear in both planning and execution of educational experiences."[55]

*The report refers to the comparison schools as controls, but they are controls in the experimental sense, because they were not formed by random assignment of pupils to control and experimental groups.

It was emphasized ". . . that while all of these activities are possible under other forms of organization, the proponents of team teaching maintain that under this plan there is a greater probability of their occurrence."[56]

The report covers in some detail the problems faced by previous team programs in attempting to assess achievement and relates the occurrence of such difficulties to the assessment of the Dundee project. It is stated that ". . . it has not often been financially possible nor politically feasible to 1. report in detail all of the operations carried out in the implementation of team teaching teaching plans, 2. design studies so that comparisons could be made at all grade levels and at all ability levels, 3. provide for adequate control groups taught by the more traditional self-contained approach and matched on the basis of ability, creativity, social skills, attitudes, motivation, etc., 4. provide for controls on various situational and environmental factors which could reasonably be expected to influence performance of students quite apart from the plan of organization and the specific teaching processes and operations employed, nor finally, 5. investigate the effects on learning outcomes of various specific features of the team teaching plan, such as flexible grouping, cooperative planning, etc."[57]

The consultants granted that ". . . there is no claim that in the present study efforts to overcome the deficiencies noted have been entirely successful. Some of the same problems have hampered this investigation as have interfered with previous ones."[58] The attempt was made, however, to extend the scope of the assessment by obtaining measures of creative thinking, and certain information on student interests, attitudes, and teacher perceptions were also obtained. It was hoped that these additional data would ". . . shed some further light on the kinds of differences, if any, which might exist between student performance under team teaching as compared with performance in the self contained or departmentalized classroom setting."[59]

Tests were selected for measuring relevant student characteristics on the basis of: 1. the time required for administration of tests, 2. the availability of norms on the basis of which comparisons could be made, and 3. the tests currently in use by the school systems involved.

The tests selected were: 1. the Stanford Achievement Tests which were administered in the fall of 1962, spring of 1963 and 1964 to classes who were at the second and fifth grade levels during the school year 1962-63, 2. the Kulhman-Anderson Intelligence Tests, and 3. the Minnesota Tests of Creativity (Abbreviated Form VII), administered during the second year of the study to the third, fourth, and sixth grade classes in Dundee and one of the control schools.

The consultants stated that ". . . had not the time required for test administration been prohibitive, it would have been desirable to administer a number of standardized instruments in order to tap certain dimensions of interests, attitudes, adjustment, dependency and personality of the students involved in the study. Because of the prohibitive amount of testing time required and the consequential disruptive influence upon school operations, the measurement of these characteristics was attempted through the use of interview and questionnaire techniques developed especially for this study. These instruments were designed to determine the student's attitude toward the school experience during the two years, the extent to which he was dependent upon adult figures in the school and upon his peers, his perceptions of the role of the teacher, and certain of his peer relationships."[60]

A problem with one of the control schools came about when it was realized that it consisted of only five grades rather than the usual six as in the other two

Schedule of Administration of Tests*

Date	Instrument
September 1962	Kuhlman-Anderson Intelligence Test, Booklet BB
	Stanford Achievement Test (Form J) Complete Battery
	Interview Schedule, Form A
May 1963	Stanford Achievement Test (Form K) Complete Battery
	Interview Schedule, Form B
September 1963	Minnesota Tests of Creative Thinking, Abbreviated Form VIII
May 1964	Minnesota Tests of Creative Thinking, Abbreviated Form VIII
	Stanford Achievement Test (Form W) Complete Battery
	Interview Schedule, Form B

*Second grade: Dundee, Control School 2, and Control School 2

Schedule of Administration of Tests*

Date	School	Instrument
September 1962	Dundee Control 1 Control 2	Kuhlman-Anderson Intelligence Booklet B
		Stanford Achievement Test (Form J) Subtests: Paragraph Meaning, Spelling, Arithmetic Reasoning, Social Studies
		Questionnaire, Form A
May 1963	Dundee and Control 1	Stanford Achievement Test (Form K) Subtests: Paragraph Meaning, Spelling, Arithmetic Reasoning, Social Studies
		Questionnaire, Form B
	Control 2	Questionnaire, Form B
September 1963	Dundee and Control 1	Minnesota Tests of Creative Thinking
May 1964	Dundee and Control 1	Stanford Achievement Test (Form W) Subtests: Paragraph Meaning, Spelling, Arithmetic Reasoning, Social Studies
		Minnesota Tests of Creative Thinking
		Questionnaire

*Fifth grade: Dundee, Control School 1, and Control School 2.

schools in the study. Therefore, this particular group could not serve as a control during the academic year of 1963-64. Its value as a control even during 1962-63 was somewhat questionable because of the difference in status of the fifth grade group in the school as compared with that of the fifth grades in the other two schools in the study.

The Student Achievement section of the Research Report includes 49 tables indicating the testing results and, including the analysis, the section totals 125 pages. The summary of results from the section follows:

"*Academic Achievement.* No conclusive evidence is provided by this study to refute previous findings that scores on standarized achievement tests are neither increased nor decreased by the team teaching plan of school organization. Although the Dundee mean scores were lower (relative to those of the control groups) during the first year of the study, the differences were offset during the second year by relatively greater gains on the part of the Dundee students. Thus, while the findings suggest that there may be differential effects, the nature of such effects is not clear on the basis of this study.

"*Attitudes, Interests and Perceptions of Teacher.* Based on data obtained through interviews and questionnaires, the following tentative conclusions seem reasonable:

"The Dundee students tended to mention more frequently the social aspects of school life and give work-oriented responses less frequently than did the control students. This difference may result directly from the larger number of peer contacts in the team teaching setting.

"There is some evidence, though inconclusive, that Dundee students had a somewhat broader range of interests than the control students, possibly because of acquaintance with additional and more diverse activities under team teaching.

"The Dundee students indicated that a greater proportion of their peer friendships were formed outside of the school, as compared with the control pupils. Furthermore, a larger proportion of the Dundee students tended to prefer friends whom they had met away from the school.

"The data suggest that there is relatively greater emphasis on behavior in the Dundee School than in the control schools. Perhaps the greater emphasis on freedom and flexibility in the Dundee program requires increased attention to behavior and discipline.

"There is some evidence, also inconclusive, that Dundee pupils tended to depend more on peers (rather than adults) for assistance with immediate problems than did students in the control schools. This may be a reflection of a team teaching effect on pupil characteristics or it may have stemmed from decreased availability of the teacher under the more flexible and mobile situation in the Dundee School.

"*Creative Thinking.* The Minnesota Tests of Creative Thinking yield scores on four aspects of creative thinking: fluency, flexibility, originality, and elaboration. Although differences between the Dundee and control schools were not entirely consistent, Dundee pupils generally had higher mean scores on fluency and flexibility than did the control pupils. The result seems to support the contention that the greater flexibility and increased peer and teacher contacts under team teaching tend to reduce rigidity and to encourage more creative and imaginative thought.

"It should be emphasized once more that these conclusions are tentative and that the findings presented above should be interpreted with caution. Although the comparison schools in the study have been called 'controls,' they should not be considered controls in the experimental sense, since they were not formed by random assignment of individual pupils. There were many factors other than the school organization which could have produced the preceding results. Furthermore, the team teaching plan at Dundee School, particularly in the first year of the study, was in a state of change and evolvement, as is true of any new system in its initial phases. Whether or not differences reported here would appear on re-examination at a later date is not known. Only through careful and controlled study over a period of several years can it be established whether stable, systematic effects on student characteristics result from the team teaching plan."[61]

THE SOCIOLOGICAL ASPECTS OF TEAM TEACHING AT DUNDEE

The Sociological Aspects section of the RESEARCH REPORT contains four subheadings: 1. Comparison of the internal structures of the three teams, examination of the role definitions, leadership patterns and interpersonal relationships that exist, and the presentation of observations concerning the consequences of team structure as organized at Dundee. 2. Analyzation of the interaction patterns of teachers and students which may be attributed to the team teaching arrangements. 3. A comparative analysis of the attitudes of Dundee and other Greenwich pupils toward their schools and identification of patterns of friendship choices and peer-adult-reliance of Dundee pupils. 4. Analysis of parent attitude toward and understanding of Dundee and effects and relationships with non-school groups upon the team teaching program.

The internal structure of the Dundee Team was analyzed and it was found that ". . . within any types of formal structure, there is ample room for variation in the pattern of interpersonal relationships. The style and philosophy of the team leader, the unique combination of persons who happen to make up a particular team, and patterns of action in meeting special circumstances which become institutionalized may lead to quite different patterns of working within the limits of the same formal structure. This is what happened at Dundee. In effect, Dundee had three different structures."[62]

In determining the variation of operational techniques among the teams, it was observed that ". . . in spite of the development during the past few decades of a substantial body of knowledge concerning the dynamics of small groups, the teams received no systematic training in group procedures. It is the consultants' belief that the work of the team leaders and of the team members would have been facilitated if they had received such assistance. Variations among the teams would still have existed, but some of the difficulties that were encountered would have been avoided or reduced in significance."[63]

The senior teacher role as defined in the original definitions placed the senior teacher in a position of responsibility for the development of curriculum. The consultants felt that many of the difficulties encountered in the senior teacher position would have been alleviated if the role had been that of assistant to the team leader.

In viewing the responsibility and authority of the team leader, it was indicated that a problem evolved because ". . . the team leader does not have any sanctions which he can bring to bear in working with his team members."[64] It was noted that ". . . the formal ratings of teachers which are required in the Greenwich system are the responsibility of the principal, and there is no evidence that the team leaders have been seriously consulted on this. The team leader does not gain his authority formally from the team since he is not named by the team."[65]

A very significant conclusion was made when the consultants said that ". . . from an examination of the working of the teams, the program at Dundee might more appropriately be called 'team planning' rather than team teaching."[66]

The close involvement of teachers in a team program brings about a high level in the visibility of actions, more so than in a self contained system. A hypothesis that was advanced in connection with this is: "The high visibility in values, ideas and teaching practices of individual teachers which the team setting inevitably

produces tends to result in a higher degree of expression of the professional norms of the teacher than is true in the case of the usual classroom behaviors of teachers."[67]

The report shows that in relationship to lesson plans ". . . the plans which were worked out by individual team members for submission to their colleagues for discussion and possible approval were presented in a detail and scope which is not practiced in many schools. The practice of developing materials locally for class work is a pattern which is strongly recommended in schools of education and is part of the practice teaching regimen, but is not a regular extensive practice of very many classroom teachers."[68] The services of the teacher aides implement this extensive production of materials.

The consultants determined that the team arrangement had desirability ". . . even if student achievement were not significantly facilitated. This may occur at two points: relationship with parents and with the administration."[69] In dealing with parents, the teacher is a representative of a group which has worked out a curriculum pattern and a grouping system in public session. "Thus the parent does not confront a single teacher, but the professional judgment of the entire team. In dealing with the administration, the teacher's lesson plans are not his alone, but his team's. Criticism is collective and not personal."[70]

In studying the various interaction patterns of students, the consultants analyzed that ". . . the Greenwich students in the fourth, fifth, and sixth grades are grouped homogeneously, but these groupings are not broken up for different subject areas. Special groupings would occur for physical education, foreign language, band, orchestra, and perhaps other special groups all of which would take only a small portion of the week. On the basis of the experience in Dundee and the curriculum outline of the Greenwich system, it is estimated that fifty groups would be found in a school with the population size of Dundee as compared with the more than one hundred in the Dundee School."[71]

Because of the changing of groups it was estimated that ". . . one and one-half to two hours a week were consumed in the shifting from one group to another. Whether in fact this is time which may be judged to be lost is another matter, and we do not have the evidence in hand to evaluate this. The opportunity to move about from place to place regularly may well increase the efficiency of the time which is spent when classes are in formal session."[72]

On the basis of samples of students from each team (twelve students from each team excluding kindergarten children), data concerning individual student contact patterns were developed. It was found that all students in the sample had contact with at least two teachers, but none had contact with more than four. Most students had two classes with the same teacher. Only 8.5% had three or four classes with the same teacher. For the teacher having contact with students it is shown that the teachers on the MacKenzie Team tended to have contact with a higher proportion of their students than the Stewart Team teachers.

In concluding the student interaction section, the consultants said: "Although team planning may be engaged in by team members for all of the students, all of the teachers on a team do not work with all students in the Dundee system.

"There is considerable variation in the proportion of students who are contacted. In the sample studies, fifty per cent of the teachers had contact with forty to sixty per cent of the students and the balance of the teachers were above or below this middle range. Therefore, the teachers did not know equally well the student members of their teams. At the points where combined judgments were involved, all members could not participate with equal background. This is not intended as an indication of a shortcoming, but rather an indication that all students in a team were not related to their teachers in the same manner."[73] The final statements in the section concerning the interaction of students and teachers are as follows:

"Although the range of contacts of students with teachers and students with students is considerably larger than would normally occur in a self contained system, the range is far below the maximum range which is more nearly characteristic of the high school and college pattern.

"The experience of individual students and of individual teachers is not a constant. Although model patterns may be described for teachers and for students, the variation is substantial and if range and intensity of contact is of significance, the student body cannot be considered as a single unit. Resources available did not permit an examination of the differences in achievement of students considered in the light of the different patterns of contacts.

"Some variations appeared between the teams, but in the size sample selected, these differences were not statistically significant. Such differences as did appear may be due to differences in the number of teachers and number of students in the three teams rather than to fundamental differences in styles of deployment of staff and students by the teams.

"As noted in the reference to high school patterns above, the deployment of students and teachers of the type achieved in Dundee could be set up without team teaching. This would involve a deployment at the beginning of the year from the central office with such minor modifications as may be necessary during the course of the year. The distinctive aspect in Dundee, other than the fact that the elementary level is involved, is the potentiality for redeployment from time to time. Extensive redeployment did not occur very frequently, but the opportunity was available and was

used on a temporary basis from time to time. The particular contacts noted above were not necessarily maintained for the entire year, but the patterns noted were stable.

"The collapsing of the two grades into one team and the random grouping process which was used for certain subjects resulted in contacts being made between students from different grade levels in a manner which would not normally occur in the self-contained system."[74]

The attitudes which the pupils at Dundee held toward the school were examined and these attitudes were compared with those in the two control schools. The analysis of the results indicated that ". . . the Dundee system has not produced a distinctive set of attitudes toward school, of peer relationships, or of patterns of independence."[75] There was felt to be the need for further study in this area.

School-Community Relationships

The relationship of the school to the community was studied. To determine the feelings of the parents, the observers visited PTA meetings, distributed questionnaires to all parents, interviewed selected parents active in school affairs, and questioned teachers on their impressions of parents' responses.

It was found that the level of misinformation about the program was striking. "In general, the parents tended to overstate the magnitude of the changes which had been introduced."[76] For example, on the questionnaires parents believed that great quantities of time were spent in large group instruction (large group activities took less than 5% of the time). The parents (seven out of ten) also believed that ". . . each of the teachers at Dundee is a specialist in one or two of the subjects taught at Dundee."[77] Only on the MacKenzie Team did specialization take place: in social studies and science instruction. The consultants put forth the hypothesis that ". . . parents did not appreciate the values which the teacher saw in team planning and cooperative execution of a program even though the teachers functioned largely as peers."[78]

It was found ". . . parents were positive in their overall impression of the team teaching program at Dundee."[79] Four out of five parents thought that the progress of their child had been satisfactory. Three out of five believed that progress was greater under the team teaching program that it would have been under the "usual elementary program."

The parents indicated that during the second year ". . . the level of understanding of the program had increased and that earlier concerns with the experimental aspects of the program had disappeared."[80] Their confidence included ". . . not only academic progress of the students, but also personality development of the students. They felt that the structural arrangement had placed greater responsibility on the students and that the students had responded to this satisfactorily."[81]

Dundee School received national attention from its team program and thousands of educators visited during the two-year period. The consultants felt: "The children and teachers apparently came to accept the visitations as part of the price which they had to pay."[82]

All of the factors involved in the Dundee project led the consultants to consider the problem of the so-called "Hawthorne effect" upon the program. To what extent did the involvement of the school in an experiment leading to behavior which was different from what would have occurred if no experiment were being carried out? Those involved in an experiment are being watched more closely than normally. They are engaged in a new program in which they have a large investment. The consequence may be that the results of the experiment reflected the special circumstances of the experiment itself rather than the intrinsic aspects of the new program.

They determined that: "We have no evidence to indicate that the Hawthorne effect was a factor. Few important differences appeared at Dundee over the two-year period. This suggests that the Hawthorne effect was not present to a degree which would lead to positive results not directly related to the innovation itself."[83]

It is worth noting that the research workers avoided making suggestions for modifications in the procedures of Dundee and gave no information about their findings to the staff during the two years.

DUNDEE REVISITED

From the inception of the team program in 1959, Dr. Smith had been associated closely with Dundee and had given constant encouragement and help to the staff. In 1963, Dr. Smith accepted the superintendency of a midwest school district. His departure from the Greenwich schools caused concern among parents and staff members concerning the future of the Dundee team program after the termination of the evaluation.

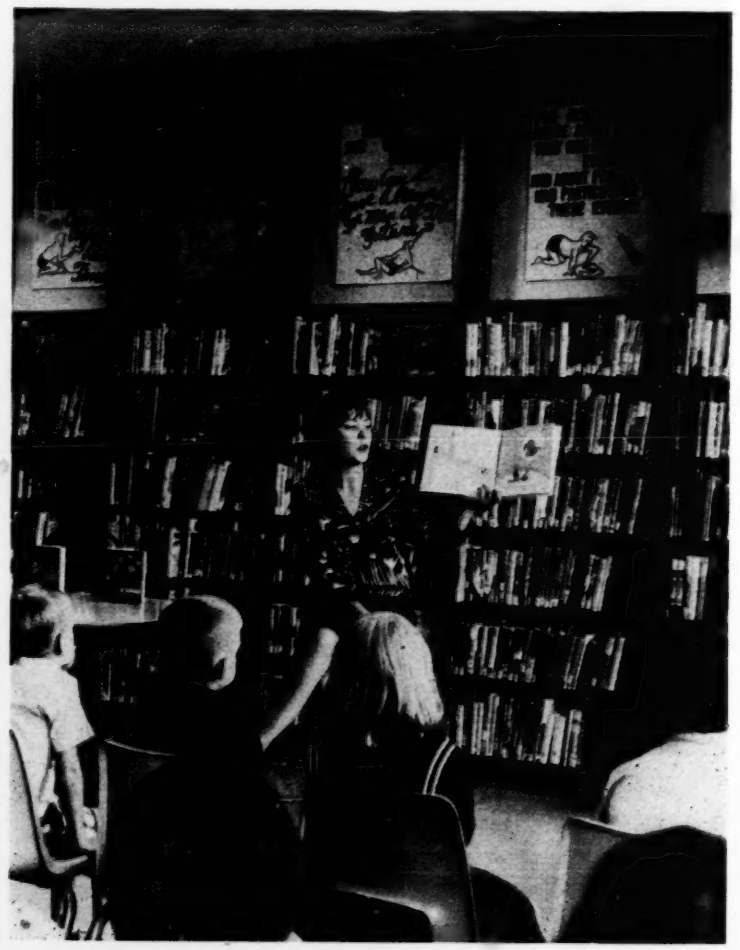
With the appointment of Dr. William J. Edgar as the new superintendent for Greenwich, their doubts were quickly resolved. His first action was to visit the Dundee Elementary School. He assured the staff and parents of his desire to continue with team teaching to observe closely its effects upon the instructional program for a minimum of five years. During this time period, he indicated, he would encourage change that was deemed advisable and view team teaching with an open mind. His support of Dundee allowed a period of change and inner evaluation which stabilized the organizational structure and suggested new directions for goals and operational procedures.

At the conclusion of the 1963-64 school year, which terminated the evaluation period, the principal resigned and the team project coordinator was appointed

Students use the study carrels in the library.

as the new principal of Dundee. Many of the changes he instituted in the school program were those suggested in the RESEARCH REPORT submitted by the Columbia consultants. The RESEARCH REPORT was published the latter half of the 1964-65 school year.

The Report indicated that the Dundee staff was reluctant to evaluate and change its modus operandi during the 1962-64 school years. The staff agreed at the beginning of the program not to make any major changes in the structure or operation of Dundee. This was to allow a more valid evaluation of the program. Other team schools that had undergone evaluations had often changed so radically during their evaluative periods that it was difficult to assess whether or not changes in the instructional program had occurred because of the original structure, or the revisions had been made after the institution of the program. Therefore, the third year produced a program that differed somewhat from the original plan conceived in 1959.



Story telling time keeps children on the edge of their seats during library period. Over six thousand books are on the library shelves.

Change

A communication and articulation problem existed because the three teaching teams functioned as "schools within a school." To achieve continuity and sequence in the instructional program, it was necessary to consider revision and change in the avenues of communication. The first step taken was to revise and clarify the roles and functions of the staff members. The revised definitions follow:

Revised Role Definitions
(tentative—1964-65 school year.)

Team Leader

"The team leader is responsible for the organization and operation of his individual team. He will carry out policies emanating from the principal in relation to the team and develop policies within the team which will be approved by the principal. The team leader will work closely with teachers in coordinating team activities, conducting meetings, assigning duties, and in developing and approving schedules. Other duties of the team leader will include informing teachers of daily activities and bulletins, working closely with the senior teacher on curriculum, assigning substitute teachers to the proper classes, being sure teachers are prepared to carry out the team's activities as determined in the team meetings, interpreting to the principal all activities and class procedures of the team, contacting supervisors and other personnel on the Greenwich School staff who will be associated with the team, keeping necessary records as required by the principal, and coordinating the general organization and overview of all team activities, academic and otherwise, each day. Team leaders will receive released time during the week to carry out the above details.

"Team leaders are responsible to see that teachers who have been assigned team duties receive released time to fulfill their said objectives.

"It is requested that team leaders are not assigned the most difficult academic areas because of the other responsibilities that are required of them.

"Team leaders are responsible for schedule changes, but must notify all special teachers and other school personnel who will be affected by these changes prior to the actual change. The principal should also be notified of changes prior to their completion."

Senior Teacher

"The senior teacher will act in the team leader's place during the team leader's absence; therefore, it is necessary the senior teacher be kept fully informed of the team operation and procedures. The role of the senior teacher is not that of being an aide to the team leader, although this may be a part of his role under certain circumstances. The senior teacher should function as a curriculum resource person and consultant for team activities. Team teachers will take considerable responsibility in curriculum matters in which they have extensive experience and background. In such instances, the senior teacher will work closely with such persons and be aware of all curriculum materials and activities which the team will develop and use.

"Curriculum is everyone's responsibility, but the senior teacher will play a major role in developing curriculum procedures with team teachers and working with the team leader in carrying out the procedures. Senior teachers on the three teams are responsible to view the entire school program and interpret the program to their own team and the instructional council. Working with them in this capacity will be the instructional communications coordinator. Team leaders should help the senior teachers secure enough released time to carry out their duties. The principal can be consulted on such matters."

Instructional Communications Coordinator

"The instructional communications coordinator will work at all team levels in developing materials and programs which affect the instructional activities. He will develop workshops for the demonstration of materials, equipment and new ideas, and the discussion of school programs. He will report directly to the principal and in the principal's absence to the assistant principal. He will receive released time each day and will spend part of this time working in the office area and resource room. He will be relieved from such duties as filing and ordering of materials. These duties will be handled by the school secretary under his direction.

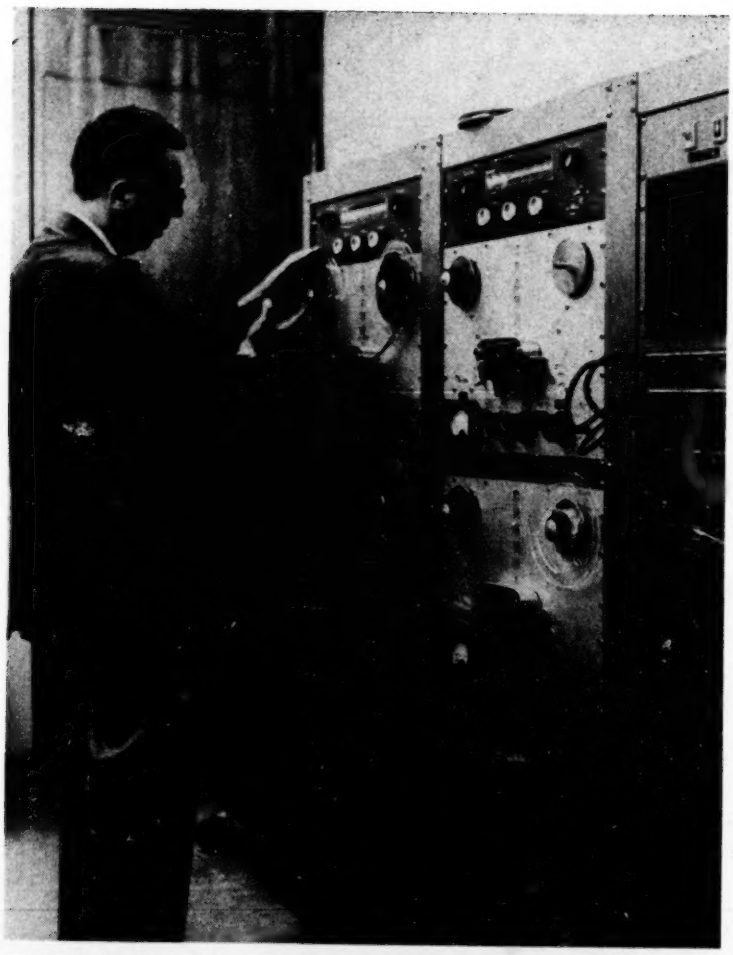
"He is responsible for the effective use of audio-visual equipment within the building and will work with the team leader and senior teachers in carrying out this activity. He will be available for consultation and assistance upon the request of the various teams. It is his duty to set up the necessary procedures for the securing and distributing of equipment. Another function of his role will be to organize along with the principal, team leaders, and senior teachers, the faculty meetings and programs for the year."

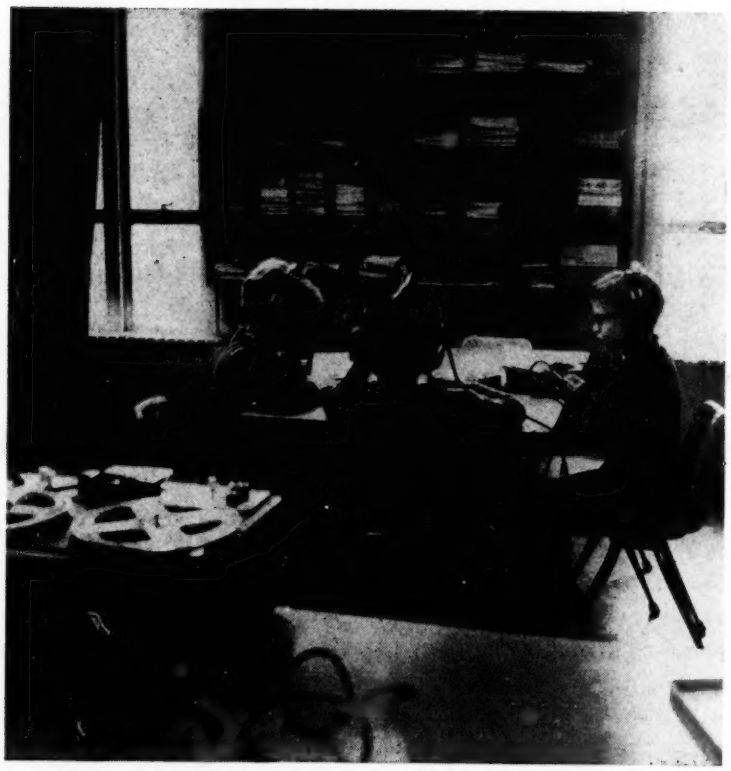
Teacher Aide

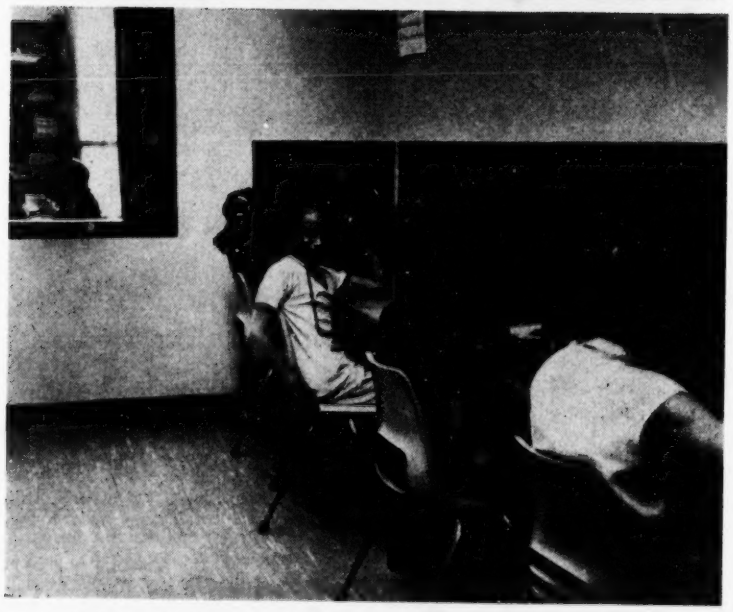
"The teacher aide's role will be more clearly defined during this school year. Some general duties that may be expected of the aide are as follows: entering information of pupil records, filing, completing required administrative reports, operating the duplicating equipment, typing curriculum materials, work sheets, tests, team memorandums and requisitions, register completion, and material distribution. The teacher aide may in certain circumstances assist teacher in the supervision of children. This will be determined by the team leader and the principal. From time to time, the aides will be requested to work in the school offices. All assignments for teacher aides will be made from the school office."

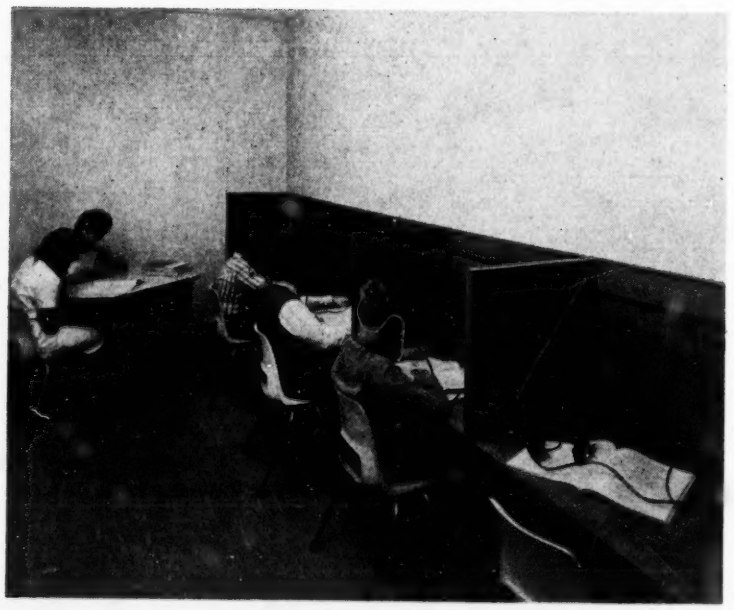
Principal

"The principal's role in the team teaching program will include the usual responsibilities that are required of an elementary principal by the Greenwich Public Schools. He is responsible for final approval of all school policies and activities. If the team leaders are in question as to procedures or activities, they should consult the principal.









The central ten channel audio system transmits programs to all rooms in the building through earphones for individualized activities or over the speakers in each room for an entire group. Students in this series of pictures are shown in classrooms and small group rooms. A teacher prepares a program for transmission from the central resource center.

"The principal will work with the team leaders, senior teachers and the instructional communications coordinator in developing school policies, programs, curriculum materials, use of equipment, determination of roles, and instructional activities."

Barclay Team

"The Barclay Team (specialists) will work at all grade levels. It is hoped that the Barclay Team members will be invited by the team leaders to attend team meetings from time to time. This will enable the Barclay Team teachers to develop their program in correlation with the academic units of the teams. Additional duties required of other teachers will be required of the Barclay Team members. Barclay Team members should be consulted prior to schedule changes that concern their classes, and they should have a part in the development of team schedules in relation to their

classes. Teacher aide time will be given for Barclay Team activities and the time may be scheduled through the school office."

Instructional Council

"The Instructional Council will be composed of the principal, team leaders, senior teachers, and a representative of the Barclay Team. The council will meet weekly. The team leaders are responsible along with the principal for the agenda of the meeting. The school secretary will record minutes of the meetings. In a bulletin, she will send the gist of these meetings to all teachers. Teachers are encouraged to suggest items for consideration of the Instructional Council and to submit them through the team leaders for the agenda.

"There will not be an administrative cabinet, but rather the principal will meet with the team leaders from time to time if such meetings are necessary.

"There are four teams within the school. The Barclay Team will include all special teachers who are in the building at least four days a week, one half of their teaching time."

Team Meetings

"The determination of the number of meetings necessary per week can be a decision of the team itself. All teams should not schedule their meetings on the same night. Judicious scheduling will allow the team leaders, senior teachers, and other team members to attend team meetings other than their own. The visiting of teachers to other team meetings is to be encouraged, and throughout the year, all should have an opportunity to see the other teams in action. Teacher visitations within the school at different team levels should be encouraged.

"Prepared agenda should be distributed to all team members one day prior to the meeting. The agenda should be as complete as possible and include alterations and recommendations for team consideration."

In these revisions, the focus was upon the school functioning as a whole with the teams as integral parts of the larger sequence rather than as separate entities. The changes in the roles were made to bring a cohesiveness to the total program.

The administrative cabinet was dissolved because it was felt that this led to an administrative elite that was neither beneficial nor desirable. The Instructional Council was enlarged to take representatives of all teams and the remainder of the staff was invited to contribute and participate. Minutes distributed to all staff members gave uniform understanding of policy decisions and adoption of regulations.

The school office became the source from which all communications to and from parents were handled. All regulations, room assignments, communications, supplies, discipline procedures, and other school policies emanated only from the school office.

Since team meetings offered a time for discussion of team activities and isolated grade level information, the total faculty meeting became a place for professional and educational stimulation. Various teachers throughout the year were given responsibility for the preparation of the monthly meeting.

To inform the staff of school-wide activities a daily bulletin was issued. The bulletin included absentees, tardy students, announcements for the day, schedule changes, and other pertinent information. It was delivered to each teacher shortly after school began at 8:45 a.m.

The teacher aides, trained in the use of all audio visual equipment, delivered, set up, and removed the equipment for the teachers. The assignment of teacher aides' time through the school office rather than by the team leaders allowed them to be used more effectively.

The reporting system was studied and a systematic, consistent procedure of grading and recording of grades at each team level was instituted. Inserts placed in the report cards explained to parents how the students were grouped and how the grades were determined for the individual child.

The senior teacher role, although at the end of the year still not satisfactory, was revised and the senior teachers were assigned duties as resource persons. They took responsibilities along with the instructional communications coordinator for bringing ideas and materials to the teams' attention. They met weekly for these purposes with the instructional communications coordinator.

The procedures for scheduling, which had always been a problem, were made less complicated by block scheduling of special teachers into one team at a time and through the use of fifteen minute modules in schedule design. The art and music teachers were assigned rooms that were permanent, and the assignment of specific rooms to be used only by one team rather than teams sharing rooms, was very effective. This eliminated the possibility of schedule conflicts between teams. It gave a permanence to room use which enabled teachers to place materials in rooms for future classes. It also eliminated confusion of students concerning class locations from day to day.

Although there were some other minor changes in the program, a move of some significance was the restriction of visitors. Even though visitors were not often in the classrooms the first two years of the program, the constant flow of people throughout the building caused concern. It was felt that because of the contemplated changes for the third year that the school and staff needed a period of time free from such observations.

DUNDEE 1965-1966

In the latter half of the 1964-65 school year, the Dundee staff began the formulation of a plan which changed the basic structure of the teams for the 1965-66 school year. The plan, approved by Dr. Edgar in June, 1965, revised the grade assignments for the teams and created a structure which would facilitate the formation of a truly nongraded program to be introduced over a period of three years.

The original structure, which had been continued without change for the first three years, organized the school on the basic of three teams with grade divisions of K-3, 3-4, and 5-6. This structure had created a number of problems because of the grade level separations. The K-2 team was too large with nine teachers and 250 children. A team of more than seven teachers was found to bog down in communications and operation. To allow the beginning of a nongraded team environment, the Stewart Team was formed with six teachers to include only the kindergarten and grade one.

The term "nongraded" is used as promiscuously as is the term "team teaching" across the country, but the original intent is still valid. Goodlad and Anderson in *The Nongraded Elementary School* state: "The nongraded school is designed to implement a theory of continuous pupil progress. Since the differences among children are great and since these differences cannot be substantially modified, school structure must facilitate the continuous educational progress of each pupil. Some pupils, therefore, will require a longer period of time than others for achieving certain learnings and attaining certain developmental levels."[84]

The kindergarten science program, done exclusively on tapes, is heard with some mixed emotions.

The revision of the structure at Dundee was completed with the desire to take advantage of the concept of nongradedness—first within each team environment, and later throughout the whole school. As the faculty achieved the complete view of the instructional process and learning sequence from K-6, the desire to make it a continuum for the students became dominant.

The team structure as a vehicle for allowing each child to work at his own rate is almost ideal. Varied groupings can be designed to provide a single learning continuum through which the pupil may progress. And the organizational structure of team teaching brings unity and articulation to the overall program.

The Stewart Team(K-1) is organized in such a manner as to allow some kindergarten children to move in an academic atmosphere for parts of the day and conversely have some first grade children relate in what would normally be considered a kindergarten atmosphere. With the breakdown of rigid grade levels, the children can be considered individually for participation in activities on a team-wide basis, regardless of chronological age.

The Fraser Team (2-3) now operates in a nongraded, cross-graded, and graded program. The opportunity to ungrade as they see fit will allow the teachers to proceed with caution. For such a concept of nongradedness is relatively simple at first glance, but difficult to achieve in actual practice. As the program expands, the two primary teams can become a single primary unit through which a pupil may progress in a period of four years or in some cases, three or five years. When this is achieved, the primary unit will be nongraded. If the primary unit is achieved, then the team structure could consist of two parallel-vertical teams, one aligning its program with the morning section of kindergarten children, and the other with the afternoon session. Or the structure could remain with two horizontal teams, as in the present arrangement.

The Mackenzie Team (4-5) now operates nongraded, graded, and cross-graded activities. The sixth grade is an extension of this team and will consist of three teachers (under the direction of the senior teacher) who will cooperate to provide an academic program aimed toward preparation for the junior high school. There is some specialization of subject matter teaching at the sixth grade level.

The revised team structure seems better not only in the team organization in regard to size for pupils and teachers, but in taking advantage of the likenesses of children and in relationship to the curriculum-learning sequence. From what was learned in the previous years, the new structure should create a better learning atmosphere for children and a better instructional environment for teachers.

The experience of three years indicated a vagueness of form and definition in the role of the senior teacher; so the new structure has a senior teacher assigned to only one team. The senior teacher is included in the three-grade MacKenzie Team, and he coordinates the instructional activities of the sixth grades under the supervision of the team leader and principal. This new design gives each team leader only two grade levels and no more than six teachers within the two grade levels. Another structure change is observed in the elimination of one teacher aide position. One teacher aide is now responsible to the Stewart and Fraser Team. The remaining aide is assigned to the MacKenzie Team.

To predict that Dundee or the other elementary schools in Greenwich will follow the program outlined above would be to go against all that the school and the school system has stood for or learned. The initiation of the nongraded primary is being made slowly. Results will be studied closely and deviations from the original plan will be made as deemed necessary and right. During the coming years, the staff will change and new concepts and innovations will come to the fore. To close the minds of those involved in the program to such stimulation, because of the rigidity of planning, would be wrong. The basic concept will remain, however, in fostering the growth of each individual child at his own rate, but the methods for causing it to happen may change or modify its direction. As the consultants indicated, Dundee will continue to change and grow in the coming years.

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FOOTNOTES

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